FCC Part 15.247

TEST REPORT

For

CC&C Technologies, Inc

8F, 150, Jian Yi Road, Zhonghe District, New Taipei City, Taiwan 235, R. O. C.

FCC ID: PANBA25T

Report Type:	**Product Type:**
Original Report	BT5.4 APTX LE Audio Dongle

Report Producer : Coco Lin

Report Number : RXZ240719063RF02

Report Date : 2024-12-02

Reviewed By: Andy Shih

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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ240719063	RXZ240719063RF02	2024-12-02	Original Report	Coco Lin

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1. General Information

1.1. Product Description for Equipment under Test (EUT)

Applicant	CC&C Technologies, Inc
	8F, 150, Jian Yi Road, Zhonghe District, New Taipei City, Taiwan 235, R. O. C.
Brand(Trade) Name	CC&C
Product (Equipment)	BT5.4 APTX LE Audio Dongle
Main Model Name	BA-25T
Series Model Name	N/A
Frequency Range	2402 ~ 2480 MHz
Maximum Conducted Peak Output Power	BR(GFSK) Mode: 4.81 dBm EDR(π/4-DQPSK) Mode: 5.89 dBm EDR(8DPSK) Mode: 5.80 dBm
Modulation Technique	BR Mode: GFSK EDR Mode: π/4-DQPSK, 8DPSK
Transmit Data Rate	BR(GFSK) Mode: 1 Mbps EDR(π/4-DQPSK) Mode: 2 Mbps EDR(8DPSK) Mode: 3 Mbps
Power Operation (Voltage Range)	External USB port: 5Vdc
Received Date	2024/08/20
Date of Test	2024/08/30 ~ 2024/10/22

*All measurement and test data in this report was gathered from production sample serial number: RXZ240719063-1 (Assigned by BACL, New Taipei Laboratory).

1.2. Objective

This report is prepared on behalf of *CC&C Technologies, Inc* in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communication Commission's rules.

1.3. Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
FCC 558074 D01 15.247 Meas Guidance v05r02.

1.4. Statement

Decision Rule: No, (The test results do not include MU judgment)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

1.5. Measurement Uncertainty

Parameter		Uncertainty
AC Mains		+/- 3.02 dB
RF output power, conducted		+/- 0.57 dB
Occupied Bandwidth		+/- 0.09 %
Unwanted Emissions, conducted		+/- 1.09 dB
Emissions, radiated	9 kHz~30 MHz	+/- 3.20 dB
	30 MHz~1 GHz	+/- 3.30 dB
	1 GHz~18 GHz	+/- 5.14 dB
	18 GHz~40 GHz	+/- 4.75 dB
Temperature		+/- 0.76 °C
Humidity		+/- 0.41 %

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

1.6. Environmental Conditions

Test Site	Test Date	Temperature (℃)	Relative Humidity (%)	ATM Pressure (hPa)	Test Engineer
AC Line Conducted Emissions	2024/10/22	24.9	60	1012.7	Wayne Pan
Radiation Spurious Emissions	2024/8/30~2024/10/17	23.9~24.8	65~67	1006~1012.3	Nick Hsieh
Duty Cycle	2024/9/2	25.7	44	1005.4	Wayne Pan
Conducted Spurious Emissions	2024/9/2	25.7	44	1005.4	Wayne Pan
20 dB Emission Bandwidth	2024/9/2	25.7	44	1005.4	Wayne Pan
Channel Separation Test	2024/9/2	25.7	44	1005.4	Wayne Pan
Time of Occupancy	2024/9/2	25.7	44	1005.4	Wayne Pan
Quantity of hopping channel	2024/9/2	25.7	44	1005.4	Wayne Pan
Maximum Output Power	2024/9/2	25.7	44	1005.4	Wayne Pan
100 kHz Bandwidth of Frequency Band Edge	2024/9/2	25.7	44	1005.4	Wayne Pan

1.7. Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) to collect test data is located on

☒70, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 221, Taiwan, R.O.C.

Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3732) and the FCC designation No.TW3732 under the Mutual Recognition Agreement (MRA) in FCC Test.

2. System Test Configuration

2.1. Description of Test Configuration

For BT mode, 79 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	40	2442
1	2403	--	--
2	2404	76	2478
3	2405	77	2479
--	--	78	2480
39	2441	/	/

For BT Modes were tested with channel 0, 39 and 78.

2.2. Equipment Modifications

No modification was made to the EUT.

2.3. EUT Exercise Software

The test software was used "BlueSuite v3.3

The system was configured for testing in engineering mode, which was provided by Applicant.

Test Frequency		Low	Middle	High
Power Level Setting	GFSK	6	6	6
	π/4-DQPSK	6	6	6
	8DPSK	6	6	6

2.4. Test Mode

Full System (model: BA-25T) for all test item.

2.5. Support Equipment List and Details

Description	Manufacturer	Model Number
NB	DELL	E6410
Adapter	DELL	DA90PE3-00

2.6. External Cable List and Details

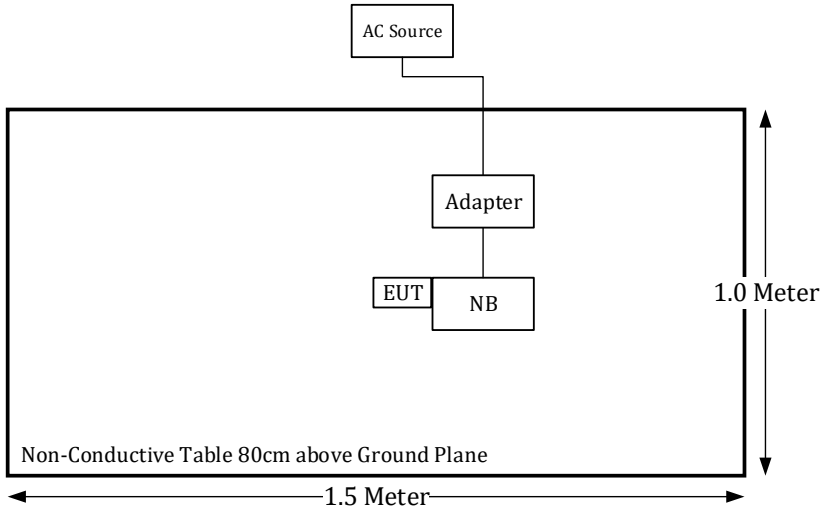
N/A

2.7. Block Diagram of Test Setup

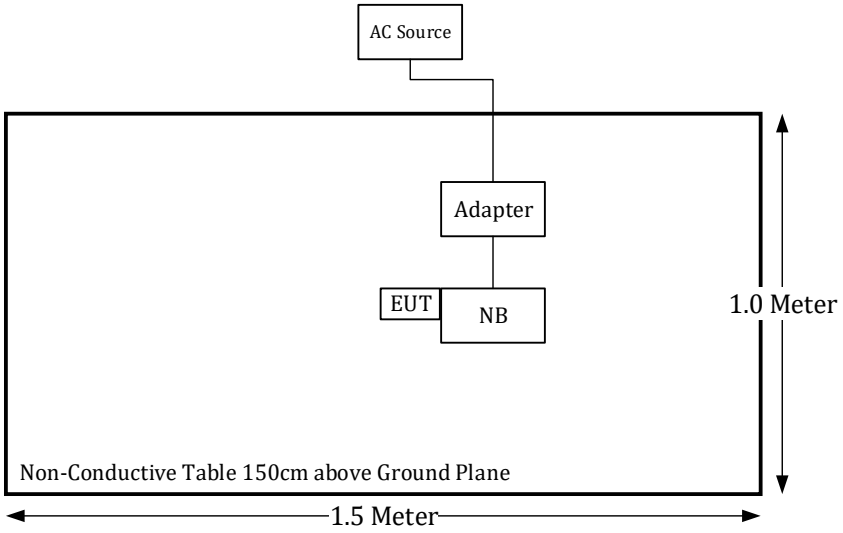
See test photographs attached in annex setup photos for the actual connections between EUT and support equipment.

Radiation:

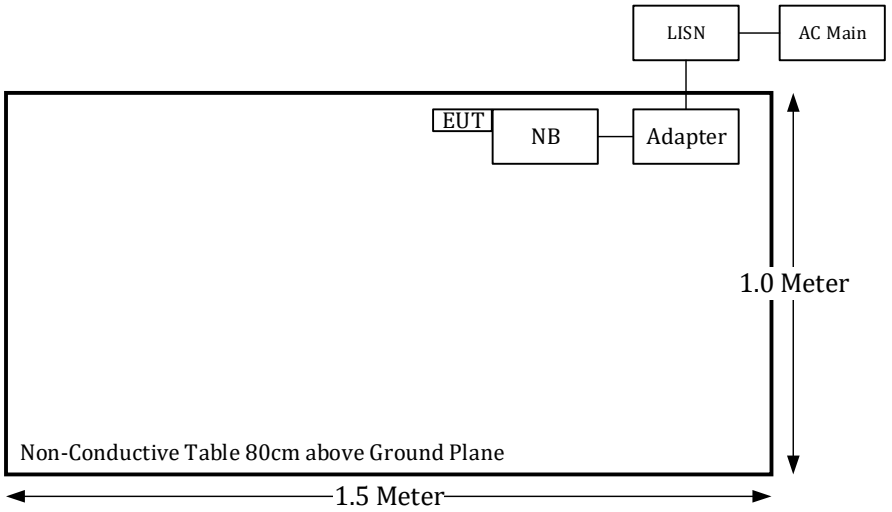
Below 1GHz:



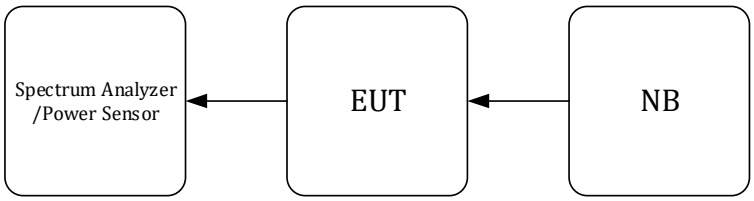
Above 1GHz:



Conduction:



Conducted:



2.8. Duty Cycle

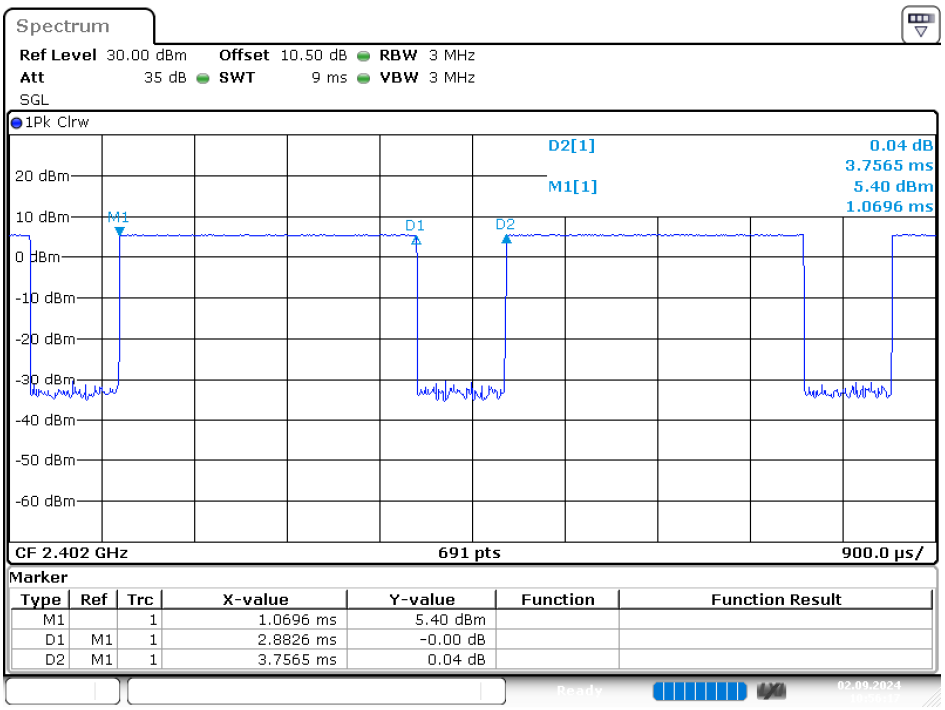
The duty cycle as below:

Radio Mode	T_{on} (ms)	T_{off} (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
BR(GFSK)	2.88	0.87	77	1.15
EDR(π/4-DQPSK)	2.86	0.91	76	1.20
EDR(8DPSK)	2.84	0.93	75	1.22

Note: Duty Cycle Correction Factor = 10*log(1/duty cycle)

Please refer to the following plots.

BR(GFSK)



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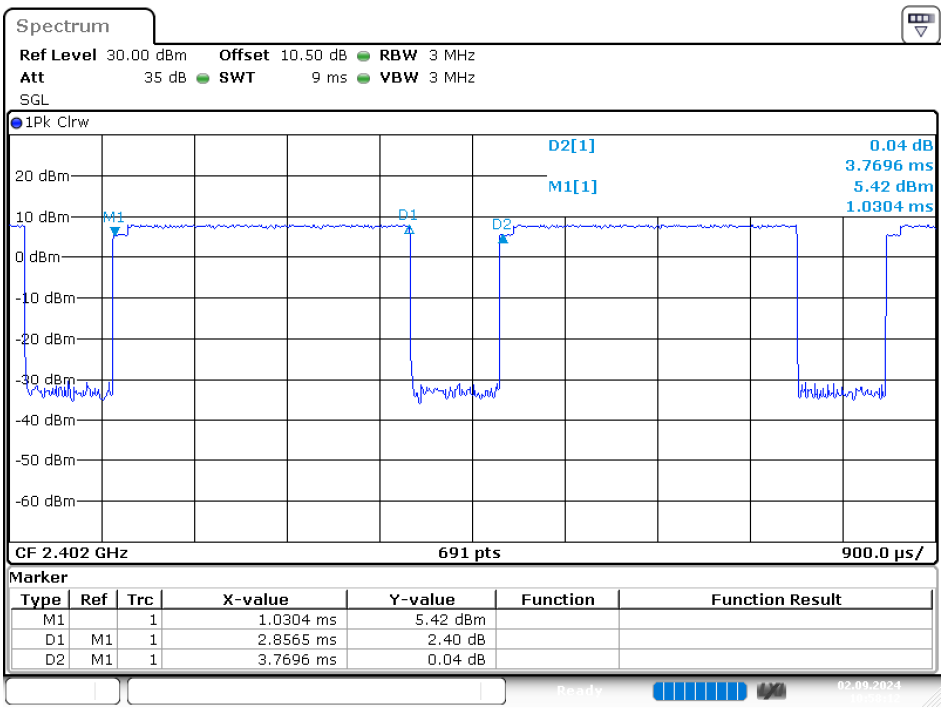
EDR(π/4-DQPSK)



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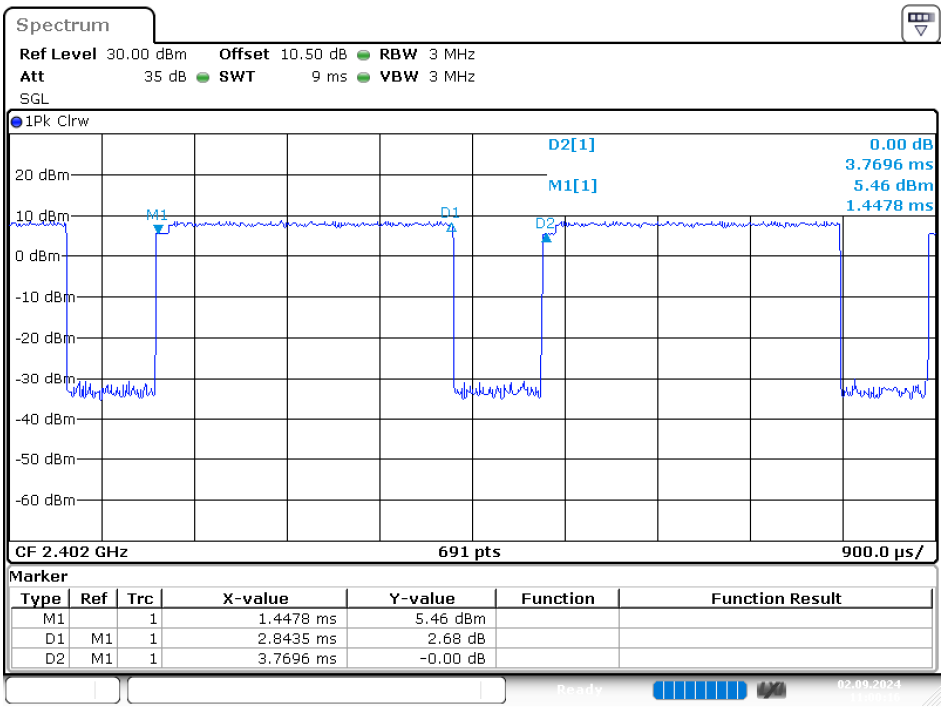
EDR(8DPSK)



Date: 2.SEP.2024 11:00:17

3. Summary of Test Results

FCC Rules	Description of Test	Results
§15.247(i), §1.1307(b)(3)(i)	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247(a)(1)	20 dB Emission Bandwidth	Compliance
§15.247 (a)(1)	Channel Separation Test	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance
§15.247(b)(1)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance

4. Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2024/2/16	2025/2/15
EMI Test Receiver	Rohde & Schwarz	ESW8	100947	2024/5/24	2025/5/23
RF Cable	EMEC	EM-CB5D	1	2024/6/5	2025/6/4
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R
Radiation 3M Room (966-A)					
Active Loop Antenna	ETS-Lindgren	6502	35796	2024/3/27	2025/3/26
Bilog Antenna with 6 dB Attenuator	SUNOL SCIENCES & MINI-CIRCUITS	JB6/UNAT-6+	A050115/15542_01	2024/1/19	2025/1/18
Double Ridged Guide Horn Antenna	A.H. system	SAS-571	1020	2024/5/21	2025/5/20
Horn Antenna	ETS-Lindgren	3116	62638	2024/8/30	2025/8/29
Preamplifier	Sonoma	310N	130601	2024/1/29	2025/1/28
Preamplifier	Channel	ERA-100M-18G-01D1748	EC2300051	2024/3/29	2025/3/28
Microware Preamplifier	EM Electronics Corporation	EM18G40G	60656	2024/1/8	2025/1/7
Spectrum Analyzer	Rohde & Schwarz	FSV40	101939	2024/3/27	2025/3/26
EMI Test Receiver	Rohde & Schwarz(R&S)	ESR3	102099	2024/6/24	2025/6/23
Microflex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2024/1/23	2025/1/22
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2024/1/23	2025/1/22
Coaxial Cable	COMMATE	PEWC	8Dr	2023/12/23	2024/12/22
Cable	EMC	EMC105-SM-SM-10000	201003	2024/1/23	2025/1/22
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2023/12/23	2024/12/22
Coaxial Cable	ROSNOL	K1K50-UP0264-K1K50-450CM	160309-1	2024/1/23	2025/1/22
Microflex Cable	ROSNOL	K1K50-UP0264-K1K50-80CM	160309-2	2024/1/23	2025/1/22
Band-stop filter	Woken	STI15-9831	STI15-9831-1	2023/10/20	2024/10/19
High-pass filter	XINGBOKEJI	XBLBQ-GTA54	200108-3-2	2023/10/20	2024/10/19
Software	AUDIX	E3	18621a	N.C.R	N.C.R
Conducted Room					
Spectrum Analyzer	Rohde & Schwarz(R&S)	FSV40	101204	2024/5/30	2025/5/29
Cable	UTIFLEX	UFA210A	9435	2023/10/2	2024/10/1
Power Sensor	Boonton	RTP5006	11037	2024/5/21	2025/5/20
Attenuator	MCL	BW-S10W5+	1419	2024/2/23	2025/2/22

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements.

5. FCC §15.247(i), §1.1307(b)(3) - RF Exposure

5.1. Applicable Standard

According to subpart 15.247(i) and subpart §1.1307(b)(3)(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

5.2. RF Exposure Evaluation Result

Project info

Band	Freq (MHz)	Tune-up Average Power (dBm)	Ant Gain (dBi)	Distances (mm)	Tune-up Average Power (mW)	ERP (dBm)	ERP (mW)
BT	2480	4.1	0.6	5	2.57	2.55	1.80

§ 1.1307(b)(3)(i)(A) and (C) method is not applicable.

§ 1.1307(b)(3)(i)(B)

Band	Freq (MHz)	Pth (mW)	X	ERP 20cm (mW)	Result Option B
BT	2480	2.72	1.905	3060	exempt

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive).

Note: The Tune-up output power was declared by the Applicant.

Result: The device compliant the SAR-Based Exemption.

6. FCC §15.203 – Antenna Requirements

6.1. Applicable Standard

According to § 15.203,

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited.

6.2. Antenna Information

Manufacturer	Type	Antenna Gain
VSO	IFA Antenna	0.6 dBi

The antenna is permanently attached to the device.

Result: Compliance

7. FCC §15.207(a) – AC Line Conducted Emissions

7.1. Applicable Standard

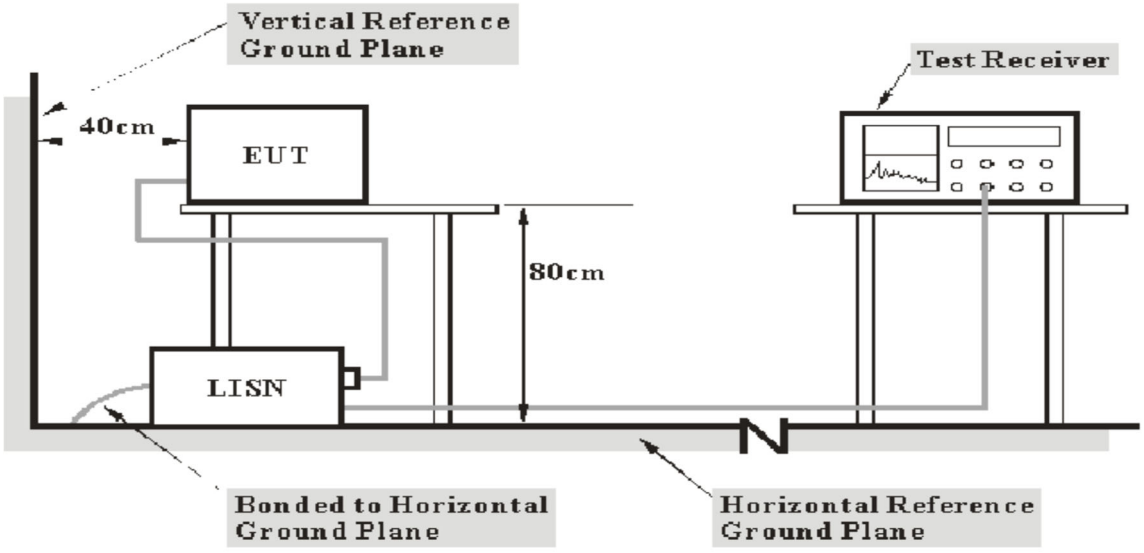
According to §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 1
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency.

7.2. EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

7.3. EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150kHz to 30MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations

Frequency Range	IF B/W
150kHz – 30MHz	9kHz

7.4. Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

7.5. Corrected Factor & Over Limit Calculation

The factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

The “Over Limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7 dB means the emission is 7 dB below the limit. The equation for Over Limit calculation is as follows:

Over Limit = Result – Limit Line

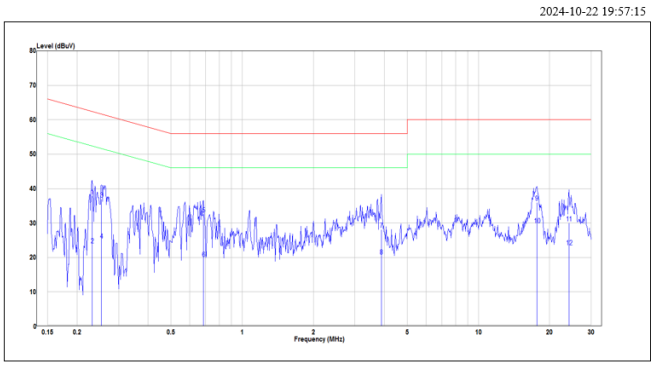
7.6. Test Results

Test Mode: Transmitting

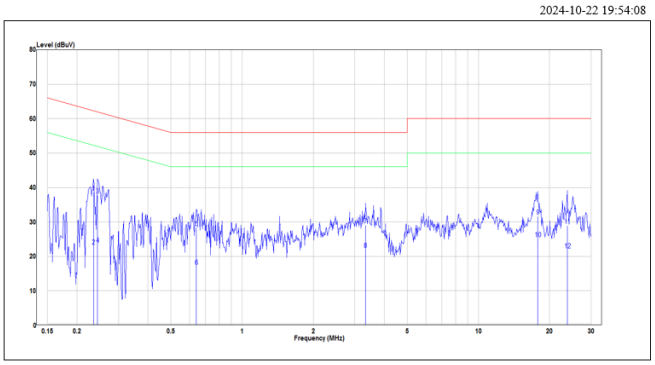
Main: AC120 V, 60 Hz

(Worst case is EDR(π/4-DQPSK) mode Low channel)

Line	Neutral



No.	Frequency (MHz)	Reading dBuV	Correct Factor(dB)	Result dBuV	Limit dBuV	Over limit (dB)	Remark	Phase
1	0.232	27.82	10.05	37.87	62.39	-24.52	QP	Line
2	0.232	13.57	10.05	23.62	52.39	-28.77	Average	Line
3	0.253	26.88	10.07	36.95	61.64	-24.70	QP	Line
4	0.253	14.91	10.07	24.98	51.64	-26.67	Average	Line
5	0.686	22.33	10.29	32.62	56.00	-23.38	QP	Line
6	0.686	9.45	10.29	19.75	46.00	-26.25	Average	Line
7	3.881	17.78	10.38	28.16	56.00	-27.84	QP	Line
8	3.881	9.99	10.38	20.37	46.00	-25.63	Average	Line
9	17.661	25.47	10.59	36.06	60.00	-23.94	QP	Line
10	17.661	18.90	10.59	29.49	50.00	-20.51	Average	Line
11	24.142	19.45	10.56	30.01	60.00	-29.99	QP	Line
12	24.142	12.59	10.56	23.15	50.00	-26.85	Average	Line



No.	Frequency (MHz)	Reading dBuV	Correct Factor(dB)	Result dBuV	Limit dBuV	Over limit (dB)	Remark	Phase
1	0.235	28.50	10.07	38.56	62.26	-23.70	QP	Neutral
2	0.235	12.85	10.07	22.91	52.26	-29.35	Average	Neutral
3	0.244	27.69	10.07	37.76	61.95	-24.19	QP	Neutral
4	0.244	13.43	10.07	23.50	51.95	-28.45	Average	Neutral
5	0.641	18.12	10.29	28.41	56.00	-27.59	QP	Neutral
6	0.641	6.81	10.29	17.10	46.00	-28.90	Average	Neutral
7	3.328	18.64	10.37	29.01	56.00	-26.99	QP	Neutral
8	3.328	11.69	10.37	22.06	46.00	-23.94	Average	Neutral
9	17.849	21.05	10.65	31.70	60.00	-28.30	QP	Neutral
10	17.849	14.45	10.65	25.11	50.00	-24.89	Average	Neutral
11	23.762	18.29	10.63	28.92	60.00	-31.08	QP	Neutral
12	23.762	11.26	10.63	21.89	50.00	-28.11	Average	Neutral

Note:

Result = Reading + Factor

Over Limit = Result – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

8. FCC §15.209, §15.205 , §15.247(d) – Spurious Emissions

8.1. Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	608 – 614	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	960 – 1240	5. 35 – 5. 46
2.1735 – 2.1905	16.80425 – 16.80475	1300 – 1427	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1435 – 1626.5	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1645.5 – 1646.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1660 – 1710	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1718.8 – 1722.2	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	2200 – 2300	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2310 – 2390	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2483.5 – 2500	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2690 – 2900	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	3260 – 3267	22.01 – 23.12
8.41425 – 8.41475	162.0125 –167.17	3.332 – 3.339	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3 3458 – 3 358	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3.600 – 4.400	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4		Above 38.6
13.36 – 13.41	399.9 – 410		

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

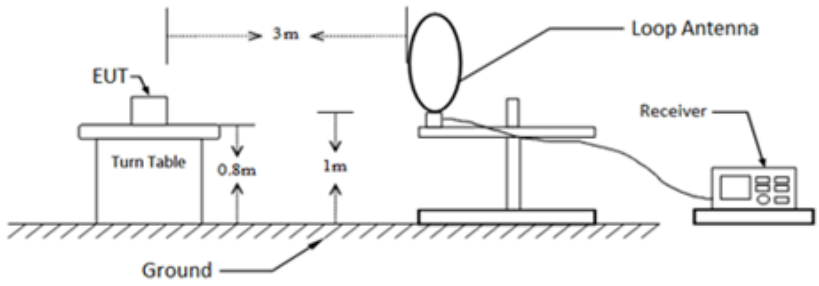
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

According to ANSI C63.10-2013, section 5.3.3
Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field, and the emissions to be measured can be detected by the measurement equipment (see 4.3.4). Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. Measurements from 18 GHz to 40 GHz are typically made at distances significantly less than 3 m from the EUT. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade of distance (inverse of linear distance for field-strength measurements or inverse of linear distance-squared for power-density measurements).

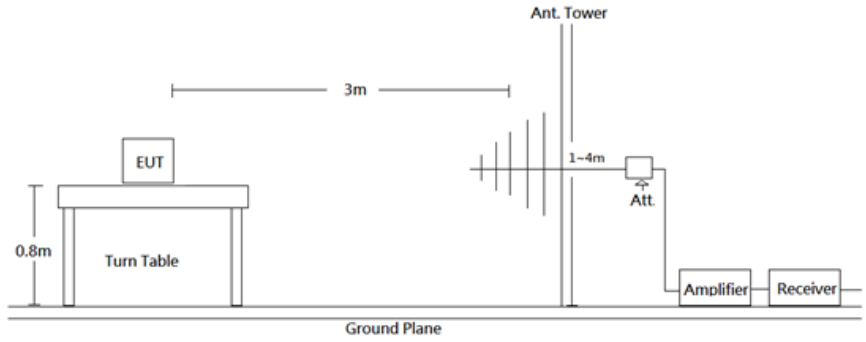
As per FCC §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

8.2. EUT Setup

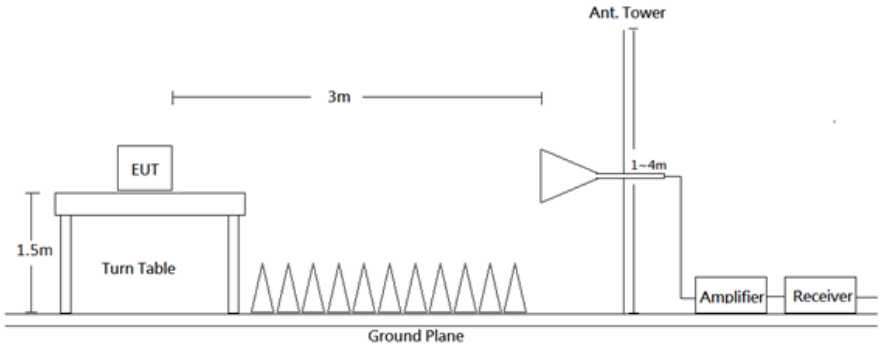
9kHz-30MHz:



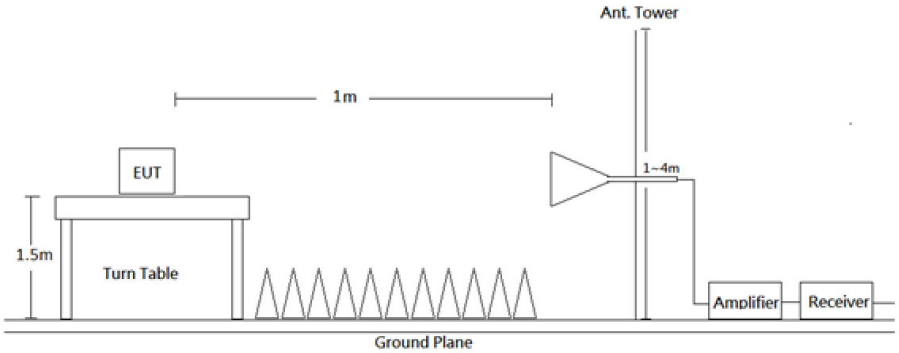
30MHz-1GHz:



1-18 GHz:



18-26.5 GHz:



Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part 15.209 and FCC 15.247 Limits.

8.3. EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 26.5 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10.

Frequency Range	RBW	VBW	Measurement method	Detector
9 kHz - 150 kHz	300 Hz	1 kHz	QP/AV	QP/AV
150 kHz - 30 MHz	10 kHz	30 kHz	QP/AV	QP/AV
30-1000 MHz	120 kHz	300 kHz	QP	QP
Above 1 GHz	Pre-scan :			
	1 MHz	3 MHz	PK	PK
	1 MHz	3 kHz	Ave	PK
	Final measurement for emission identified during pre-scan :			
	1 MHz	3 MHz	PK	PK
	1 MHz	10 Hz	Ave	PK

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

8.4. Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in Quasi-peak and average detector mode from 9 kHz to 30 MHz, Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

8.5. Corrected Factor & Margin Calculation

The Correct Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Level – Limit

8.6. Test Results

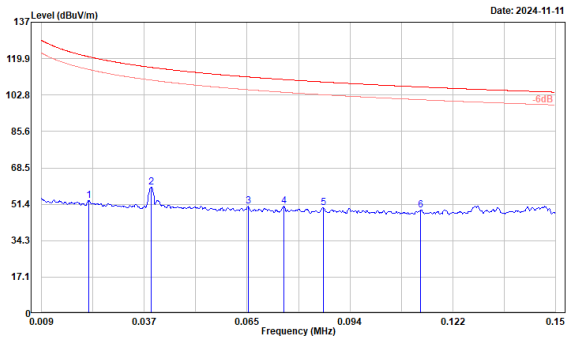
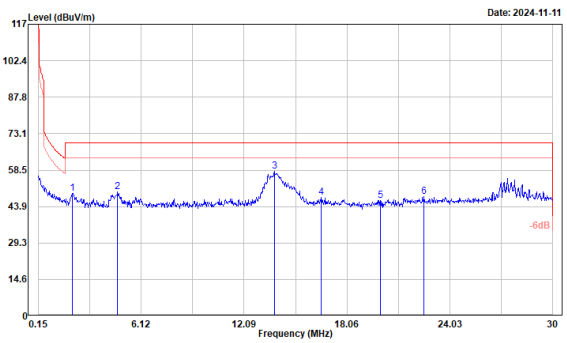
Test Mode: Transmitting

(Pre-scan with three orthogonal axis, and worse case as Z axis.)

9kHz-30MHz:

(Worst case is EDR(π/4-DQPSK) mode, low channel)

(Pre-scan using three directional polarities, worst case as parallel.)

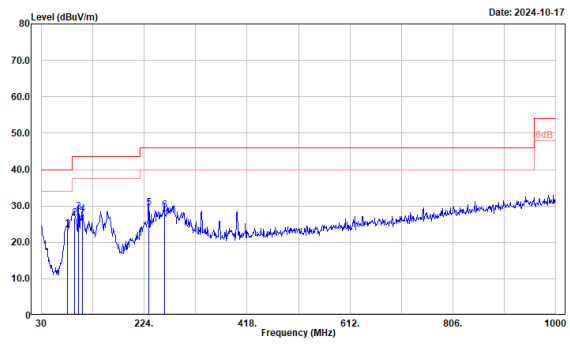
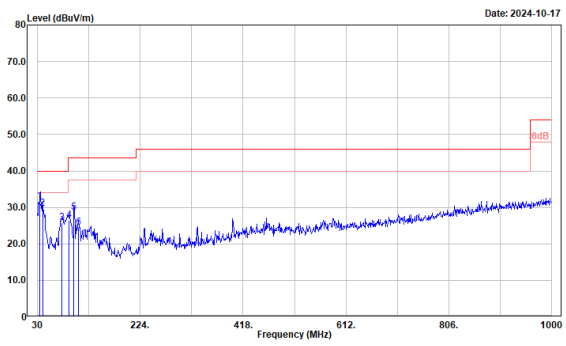
9kHz-150kHz	150kHz-30MHz
	

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
0.022	38.21	14.83	53.04	120.77	-67.73	100	0	Average
0.039	46.47	12.99	59.46	115.75	-56.29	100	0	Average
0.066	38.70	11.64	50.34	111.26	-60.92	100	0	Average
0.075	38.91	11.41	50.32	110.06	-59.74	100	0	Average
0.086	38.52	11.32	49.84	108.89	-59.05	100	0	Average
0.113	37.54	11.19	48.73	106.54	-57.81	100	0	Average

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2.120	38.51	10.70	49.21	69.54	-20.33	100	360	Average
4.747	39.13	10.66	49.79	69.54	-19.75	100	360	Average
13.851	46.32	11.57	57.89	69.54	-11.65	100	360	Average
16.568	35.80	11.62	47.42	69.54	-22.12	100	360	Average
20.000	34.69	11.68	46.37	69.54	-23.17	100	360	Average
22.538	36.19	11.70	47.89	69.54	-21.65	100	360	Average

30MHz-1GHz:

(worst case is EDR(π/4-DQPSK) mode)

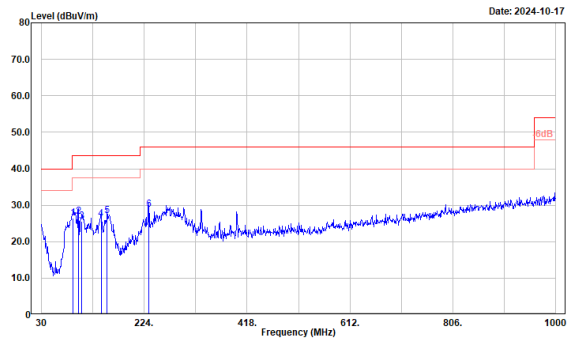
Low channel	
Horizontal	**Vertical**
	

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
79.470	39.55	-15.63	23.92	40.00	-16.08	100	77	QP
92.080	41.64	-15.05	26.59	43.50	-16.91	100	256	QP
99.840	41.56	-13.16	28.40	43.50	-15.10	100	285	QP
107.600	39.03	-11.29	27.74	43.50	-15.76	100	270	QP
232.730	40.95	-11.37	29.58	46.00	-16.42	100	99	QP
261.830	39.01	-10.21	28.80	46.00	-17.20	100	15	QP

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
34.850	37.77	-6.06	31.71	40.00	-8.29	100	214	QP
39.700	39.22	-9.59	29.63	40.00	-10.37	100	1	QP
75.590	41.01	-15.21	25.80	40.00	-14.20	100	264	QP
89.170	41.96	-15.56	26.40	43.50	-17.10	100	76	QP
98.870	41.93	-13.36	28.57	43.50	-14.93	100	5	QP
107.600	35.84	-11.29	24.55	43.50	-18.95	100	325	QP

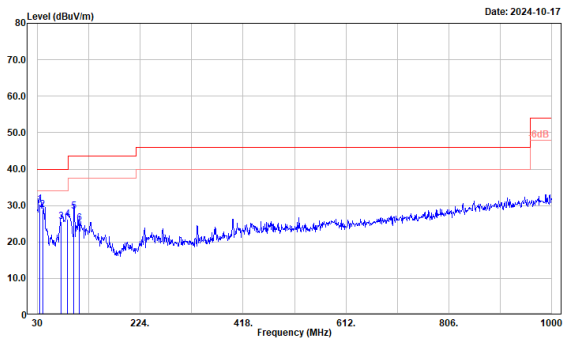
Middle channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
90.140	41.96	-15.46	26.50	43.50	-17.00	100	257	QP
99.840	40.15	-13.16	26.99	43.50	-16.51	100	276	QP
106.630	37.08	-11.41	25.67	43.50	-17.83	100	276	QP
142.520	35.92	-9.75	26.17	43.50	-17.33	100	257	QP
154.160	37.05	-9.93	27.12	43.50	-16.38	100	257	QP
232.730	40.25	-11.37	28.88	46.00	-17.12	100	82	QP

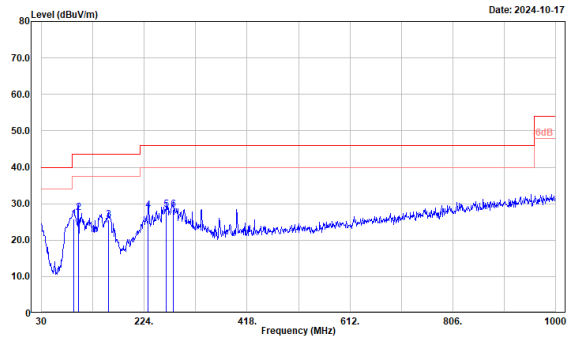
Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
34.850	36.36	-6.06	30.30	40.00	-9.70	100	296	QP
39.700	38.42	-9.59	28.83	40.00	-11.17	100	224	QP
74.620	40.78	-15.18	25.60	40.00	-14.40	100	277	QP
86.260	42.20	-15.98	26.22	40.00	-13.78	100	52	QP
98.870	41.84	-13.36	28.48	43.50	-15.02	100	338	QP
109.540	35.94	-10.77	25.17	43.50	-18.33	100	0	QP

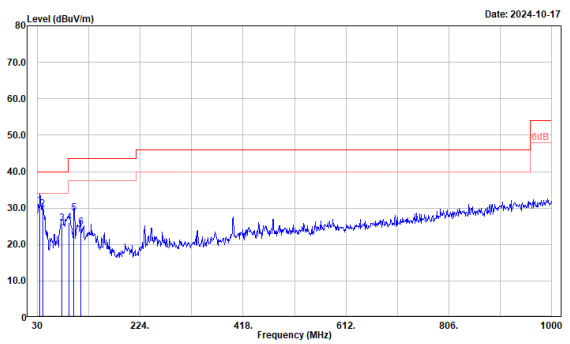
High channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
91.110	41.15	-15.35	25.80	43.50	-17.70	100	243	QP
99.840	40.66	-13.16	27.50	43.50	-16.00	100	274	QP
156.100	35.52	-10.03	25.49	43.50	-18.01	100	278	QP
231.760	39.53	-11.42	28.11	46.00	-17.89	100	100	QP
265.710	37.99	-9.65	28.34	46.00	-17.66	100	33	QP
279.290	37.66	-9.16	28.50	46.00	-17.50	100	359	QP

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
34.850	36.88	-6.06	30.82	40.00	-9.18	100	208	QP
39.700	39.30	-9.59	29.71	40.00	-10.29	100	0	QP
76.560	41.15	-15.35	25.80	40.00	-14.20	100	63	QP
89.170	41.56	-15.56	26.00	43.50	-17.50	100	56	QP
98.870	41.89	-13.36	28.53	43.50	-14.97	100	75	QP
111.480	35.26	-10.58	24.68	43.50	-18.82	100	354	QP

Level = Reading + Factor.

Margin = Level – Limit.

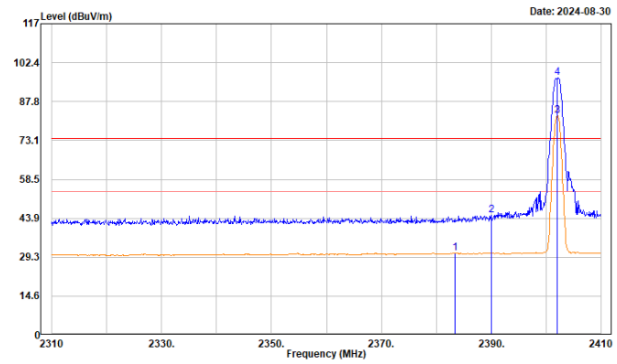
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Band-Edge:

BR (GFSK) mode

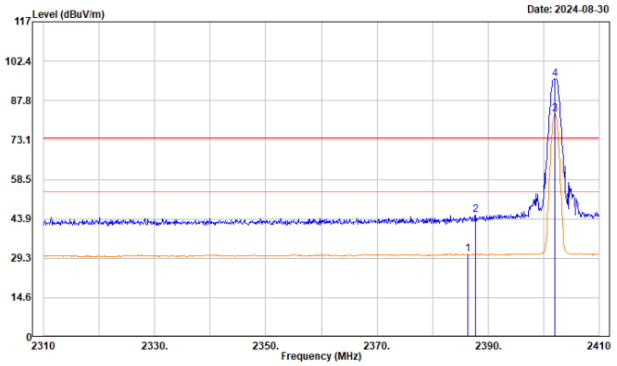
Low channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2383.500	41.96	-11.14	30.82	54.00	-23.18	182	183	Average
2390.000	55.97	-11.09	44.88	74.00	-29.12	182	183	Peak
2402.000	93.52	-11.02	82.50			182	183	Average
2402.000	107.58	-11.02	96.56			182	183	Peak

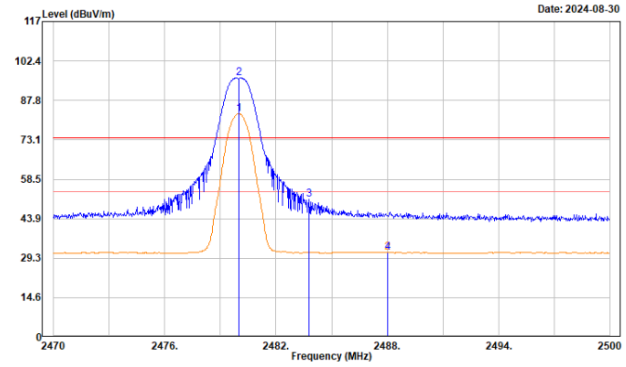
Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2386.300	41.93	-11.12	30.81	54.00	-23.19	102	99	Average
2387.800	56.54	-11.10	45.44	74.00	-28.56	102	99	Peak
2402.000	93.80	-11.02	82.78			102	99	Average
2402.000	106.88	-11.02	95.86			102	99	Peak

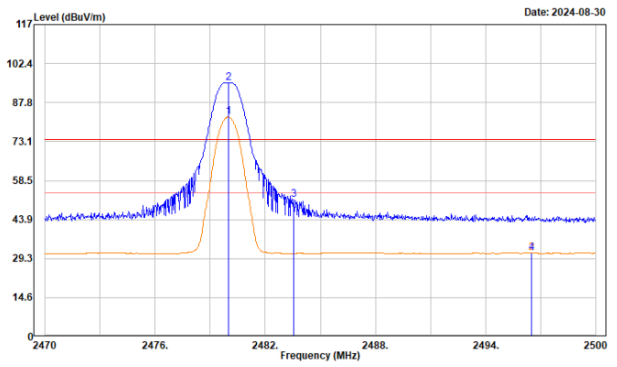
High channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	93.53	-10.66	82.87			127	308	Average
2480.000	106.64	-10.66	95.98			127	308	Peak
2483.800	61.60	-10.60	51.00	74.00	-23.00	127	308	Peak
2488.000	42.06	-10.56	31.50	54.00	-22.50	127	308	Average

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	93.00	-10.66	82.34			240	104	Average
2480.000	105.79	-10.66	95.13			240	104	Peak
2483.530	62.03	-10.61	51.42	74.00	-22.58	240	104	Peak
2496.520	41.91	-10.46	31.45	54.00	-22.55	240	104	Average

Level = Reading + Factor.

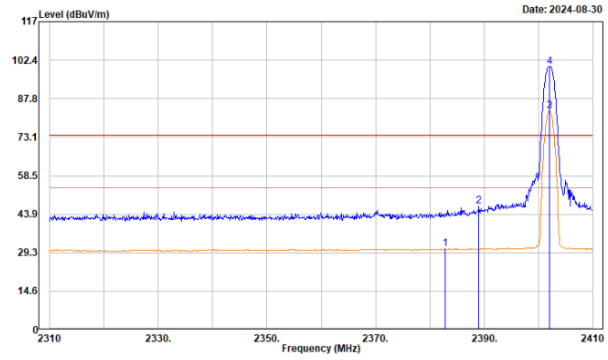
Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

EDR (π/4-DQPSK) mode

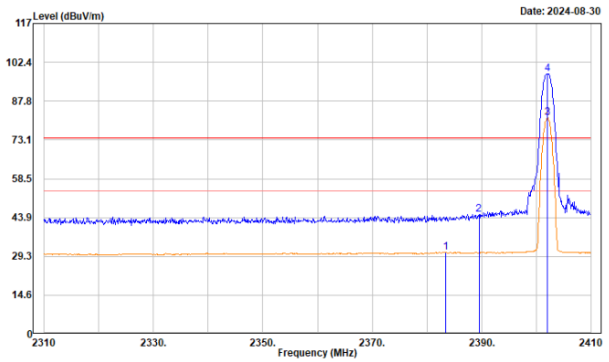
Low channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2382.800	41.86	-11.14	30.72	54.00	-23.28	178	65	Average
2389.000	57.87	-11.10	46.77	74.00	-27.23	178	65	Peak
2402.000	94.22	-11.02	83.20			178	65	Average
2402.000	111.00	-11.02	99.98			178	65	Peak

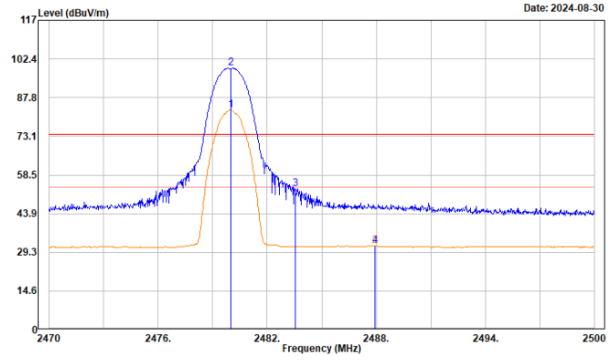
Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2383.400	41.87	-11.14	30.73	54.00	-23.27	100	102	Average
2389.500	56.15	-11.09	45.06	74.00	-28.94	100	102	Peak
2402.000	92.56	-11.02	81.54			100	102	Average
2402.000	109.07	-11.02	98.05			100	102	Peak

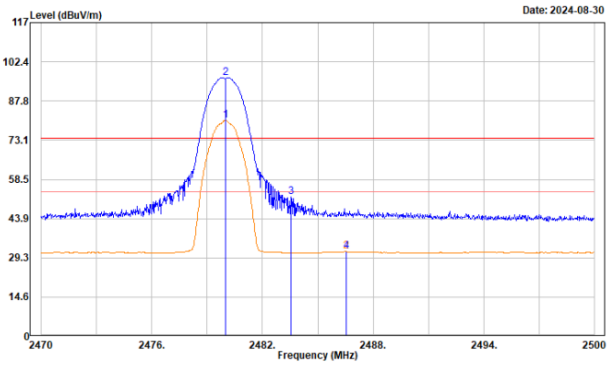
High channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	93.76	-10.66	83.10			132	63	Average
2480.000	109.49	-10.66	98.83			132	63	Peak
2483.530	63.90	-10.61	53.29	74.00	-20.71	132	63	Peak
2487.910	42.22	-10.57	31.65	54.00	-22.35	132	63	Average

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	91.15	-10.66	80.49			187	104	Average
2480.000	107.11	-10.66	96.45			187	104	Peak
2483.530	62.51	-10.61	51.90	74.00	-22.10	187	104	Peak
2486.530	42.17	-10.58	31.59	54.00	-22.41	187	104	Average

Level = Reading + Factor.

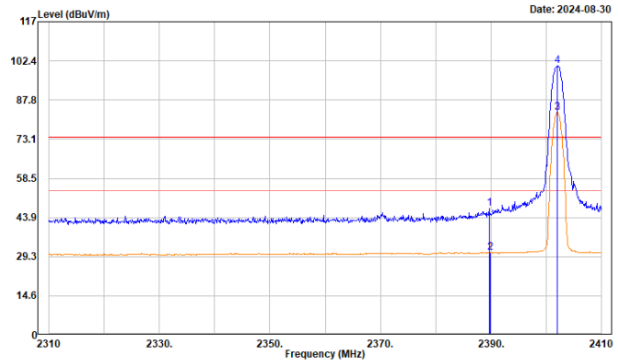
Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

EDR (8DPSK) mode

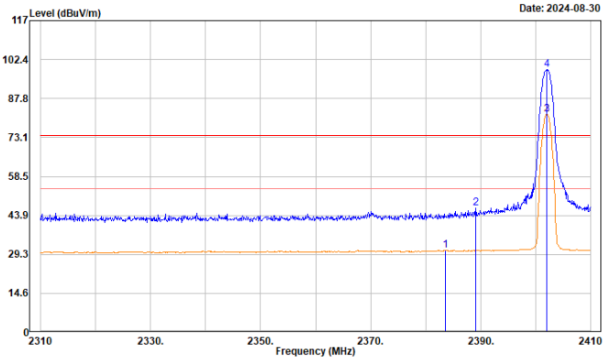
Low channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2389.700	58.26	-11.09	47.17	74.00	-26.83	177	64	Peak
2389.900	41.90	-11.09	30.81	54.00	-23.19	177	64	Average
2402.000	94.01	-11.02	82.99			177	64	Average
2402.000	111.50	-11.02	100.48			177	64	Peak

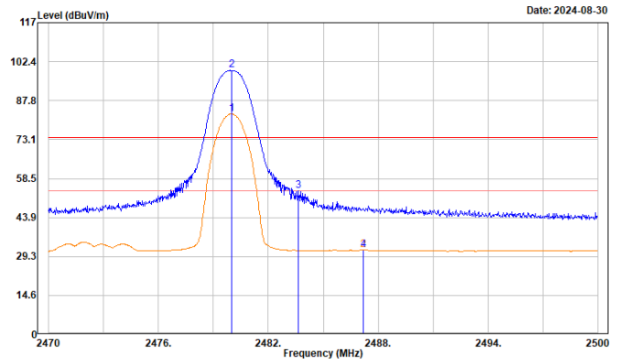
Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2383.600	41.93	-11.14	30.79	54.00	-23.21	100	100	Average
2389.100	57.78	-11.10	46.68	74.00	-27.32	100	100	Peak
2402.000	92.96	-11.02	81.94			100	100	Average
2402.000	109.63	-11.02	98.61			100	100	Peak

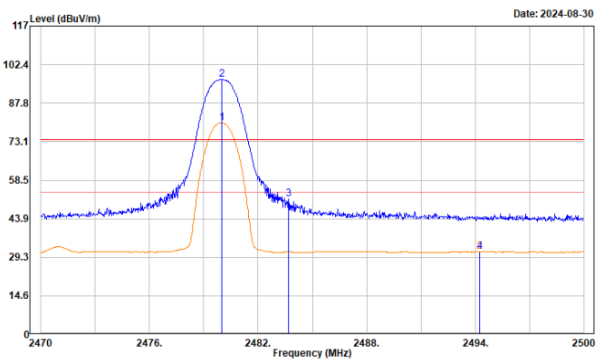
High channel

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	93.36	-10.66	82.70			139	59	Average
2480.000	109.77	-10.66	99.11			139	59	Peak
2483.620	64.41	-10.61	53.80	74.00	-20.20	139	59	Peak
2487.190	42.25	-10.57	31.68	54.00	-22.32	139	59	Average

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
2480.000	91.03	-10.66	80.37			191	107	Average
2480.000	107.48	-10.66	96.82			191	107	Peak
2483.680	61.85	-10.61	51.24	74.00	-22.76	191	107	Peak
2494.240	41.94	-10.49	31.45	54.00	-22.55	191	107	Average

Level = Reading + Factor.

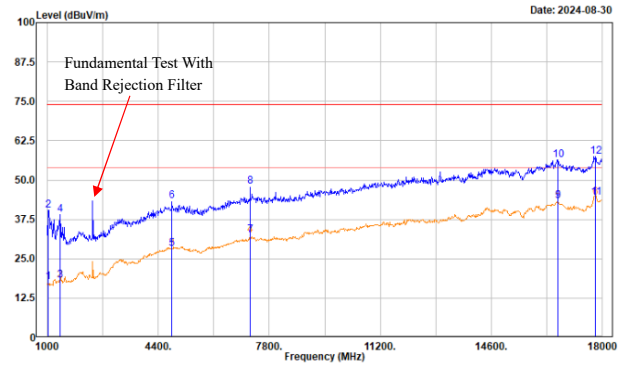
Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

1GHz-18GHz:

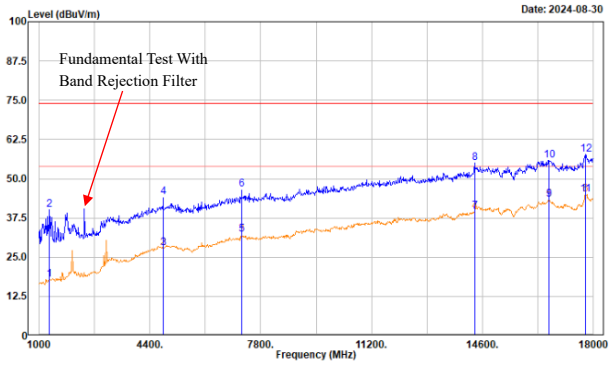
(worst case is BR (GFSK) mode, low channel)

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1034.000	33.43	-15.83	17.60	54.00	-36.40	150	355	Average
1034.000	56.25	-15.83	40.42	74.00	-33.58	150	355	Peak
1391.000	32.62	-14.39	18.23	54.00	-35.77	150	171	Average
1391.000	53.43	-14.39	39.04	74.00	-34.96	150	171	Peak
4804.000	32.25	-4.09	28.16	54.00	-25.84	152	74	Average
4804.000	47.40	-4.09	43.31	74.00	-30.69	152	74	Peak
7206.000	32.12	0.43	32.55	54.00	-21.45	101	13	Average
7206.000	47.67	0.43	48.10	74.00	-25.90	101	13	Peak
16640.000	31.39	12.04	43.43	54.00	-10.57	150	266	Average
16640.000	44.25	12.04	56.29	74.00	-17.71	150	266	Peak
17796.000	31.68	12.88	44.56	54.00	-9.44	150	317	Average
17796.000	44.55	12.88	57.43	74.00	-16.57	150	317	Peak

Vertical

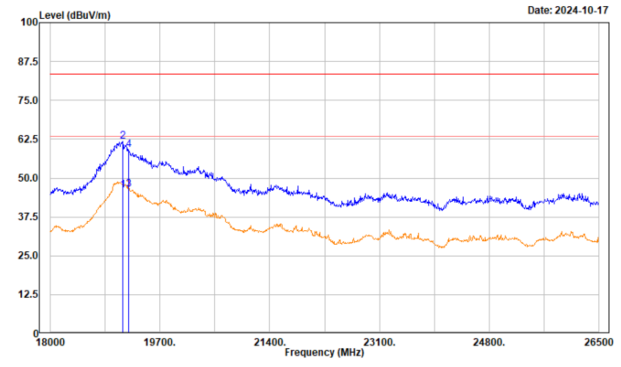


Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1323.000	32.64	-14.64	18.00	54.00	-36.00	150	108	Average
1323.000	54.81	-14.64	40.17	74.00	-33.83	150	108	Peak
4804.000	32.11	-4.09	28.02	54.00	-25.98	356	164	Average
4804.000	48.27	-4.09	44.18	74.00	-29.82	356	164	Peak
7206.000	31.83	0.43	32.26	54.00	-21.74	208	91	Average
7206.000	46.07	0.43	46.50	74.00	-27.50	208	91	Peak
14362.000	28.40	11.06	39.46	54.00	-14.54	150	161	Average
14362.000	44.07	11.06	55.13	74.00	-18.87	150	161	Peak
16640.000	31.27	12.04	43.31	54.00	-10.69	150	20	Average
16640.000	43.90	12.04	55.94	74.00	-18.06	150	20	Peak
17762.000	32.19	12.83	45.02	54.00	-8.98	150	215	Average
17762.000	44.88	12.83	57.71	74.00	-16.29	150	215	Peak

18GHz-26.5GHz:

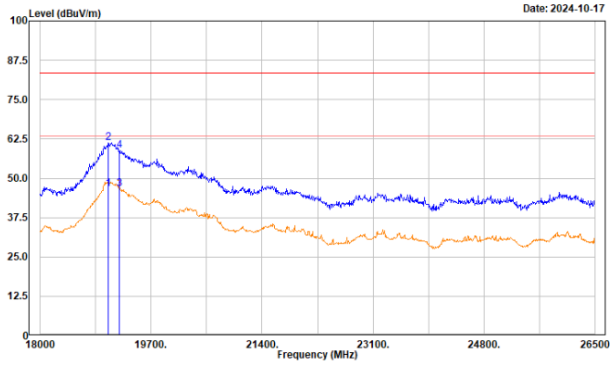
(worst case is BR (GFSK) mode, low channel)

Horizontal



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
19122.000	28.69	17.47	46.16	63.50	-17.34	150	357	Average
19122.000	44.44	17.47	61.91	83.50	-21.59	150	357	Peak
19216.000	29.88	16.43	46.31	63.50	-17.19	150	248	Average
19216.000	42.62	16.43	59.05	83.50	-24.45	150	248	Peak

Vertical



Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
19045.500	28.65	18.10	46.75	63.50	-16.75	150	67	Average
19045.500	43.26	18.10	61.36	83.50	-22.14	150	67	Peak
19216.000	30.26	16.43	46.69	63.50	-16.81	150	260	Average
19216.000	42.42	16.43	58.85	83.50	-24.65	150	260	Peak

Level = Reading + Factor.

Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

For 18-26.5GHz Convert the test distance limit of 3 meters to a limit of 1 meter:

Conversion factor = 20 log (1m/3m) = 9.5 dB,

Average Limit = 54+9.5 = 63.50 dBuV/m , Peak Limit = 63.50+20 = 83.50 dBuV/m @ 1m

Above 1GHz

BR (GFSK)

Low channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1034.000	33.43	-15.83	17.60	54.00	-36.40	150	355	Average
1034.000	56.25	-15.83	40.42	74.00	-33.58	150	355	Peak
1391.000	32.62	-14.39	18.23	54.00	-35.77	150	171	Average
1391.000	53.43	-14.39	39.04	74.00	-34.96	150	171	Peak
4804.000	32.25	-4.09	28.16	54.00	-25.84	152	74	Average
4804.000	47.40	-4.09	43.31	74.00	-30.69	152	74	Peak
7206.000	32.12	0.43	32.55	54.00	-21.45	101	13	Average
7206.000	47.67	0.43	48.10	74.00	-25.90	101	13	Peak
16640.000	31.39	12.04	43.43	54.00	-10.57	150	266	Average
16640.000	44.25	12.04	56.29	74.00	-17.71	150	266	Peak
17796.000	31.68	12.88	44.56	54.00	-9.44	150	317	Average
17796.000	44.55	12.88	57.43	74.00	-16.57	150	317	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
1323.000	32.64	-14.64	18.00	54.00	-36.00	150	108	Average
1323.000	54.81	-14.64	40.17	74.00	-33.83	150	108	Peak
4804.000	32.11	-4.09	28.02	54.00	-25.98	356	164	Average
4804.000	48.27	-4.09	44.18	74.00	-29.82	356	164	Peak
7206.000	31.83	0.43	32.26	54.00	-21.74	208	91	Average
7206.000	46.07	0.43	46.50	74.00	-27.50	208	91	Peak
14362.000	28.40	11.06	39.46	54.00	-14.54	150	161	Average
14362.000	44.07	11.06	55.13	74.00	-18.87	150	161	Peak
16640.000	31.27	12.04	43.31	54.00	-10.69	150	20	Average
16640.000	43.90	12.04	55.94	74.00	-18.06	150	20	Peak
17762.000	32.19	12.83	45.02	54.00	-8.98	150	215	Average
17762.000	44.88	12.83	57.71	74.00	-16.29	150	215	Peak

Middle channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	37.09	-3.52	33.57	54.00	-20.43	140	196	Average
4882.000	48.63	-3.52	45.11	74.00	-28.89	140	196	Peak
7323.000	34.05	0.53	34.58	54.00	-19.42	100	12	Average
7323.000	47.23	0.53	47.76	74.00	-26.24	100	12	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	34.82	-3.52	31.30	54.00	-22.70	120	240	Average
4882.000	47.76	-3.52	44.24	74.00	-29.76	120	240	Peak
7323.000	30.43	0.53	30.96	54.00	-23.04	154	341	Average
7323.000	45.31	0.53	45.84	74.00	-28.16	154	341	Peak

High channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	36.33	-3.67	32.66	54.00	-21.34	133	196	Average
4960.000	48.94	-3.67	45.27	74.00	-28.73	133	196	Peak
7440.000	32.49	0.28	32.77	54.00	-21.23	100	306	Average
7440.000	47.54	0.28	47.82	74.00	-26.18	100	306	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	34.26	-3.67	30.59	54.00	-23.41	114	260	Average
4960.000	48.53	-3.67	44.86	74.00	-29.14	114	260	Peak
7440.000	32.35	0.28	32.63	54.00	-21.37	150	294	Average
7440.000	46.45	0.28	46.73	74.00	-27.27	150	294	Peak

Note:

Level = Reading + Factor.

Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

EDR (π/4-DQPSK)

Low channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4804.000	32.98	-4.09	28.89	54.00	-25.11	136	72	Average
4804.000	47.67	-4.09	43.58	74.00	-30.42	136	72	Peak
7206.000	33.26	0.43	33.69	54.00	-20.31	124	351	Average
7206.000	46.88	0.43	47.31	74.00	-26.69	124	351	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4804.000	31.89	-4.09	27.80	54.00	-26.20	168	237	Average
4804.000	47.14	-4.09	43.05	74.00	-30.95	168	237	Peak
7206.000	31.44	0.43	31.87	54.00	-22.13	197	95	Average
7206.000	46.21	0.43	46.64	74.00	-27.36	197	95	Peak

Middle channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	35.26	-3.52	31.74	54.00	-22.26	128	184	Average
4882.000	48.86	-3.52	45.34	74.00	-28.66	128	184	Peak
7323.000	33.58	0.53	34.11	54.00	-19.89	101	12	Average
7323.000	46.94	0.53	47.47	74.00	-26.53	101	12	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	33.47	-3.52	29.95	54.00	-24.05	144	237	Average
4882.000	47.74	-3.52	44.22	74.00	-29.78	144	237	Peak
7323.000	30.94	0.53	31.47	54.00	-22.53	121	137	Average
7323.000	45.48	0.53	46.01	74.00	-27.99	121	137	Peak

High channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	36.21	-3.67	32.54	54.00	-21.46	131	194	Average
4960.000	49.33	-3.67	45.66	74.00	-28.34	131	194	Peak
7440.000	33.84	0.28	34.12	54.00	-19.88	129	7	Average
7440.000	47.45	0.28	47.73	74.00	-26.27	129	7	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	34.63	-3.67	30.96	54.00	-23.04	127	95	Average
4960.000	48.34	-3.67	44.67	74.00	-29.33	127	95	Peak
7440.000	31.06	0.28	31.34	54.00	-22.66	118	294	Average
7440.000	45.57	0.28	45.85	74.00	-28.15	118	294	Peak

Note:

Level = Reading + Factor.

Margin = Level – Limit.

Factor = Antenna Factor + Cable Loss – Amplifier Gain.

EDR (8DPSK)

Low channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4804.000	32.76	-4.09	28.67	54.00	-25.33	142	186	Average
4804.000	46.98	-4.09	42.89	74.00	-31.11	142	186	Peak
7206.000	33.24	0.43	33.67	54.00	-20.33	119	9	Average
7206.000	47.11	0.43	47.54	74.00	-26.46	119	9	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4804.000	35.03	-4.09	30.94	54.00	-23.06	266	161	Average
4804.000	48.29	-4.09	44.20	74.00	-29.80	266	161	Peak
7206.000	32.41	0.43	32.84	54.00	-21.16	245	111	Average
7206.000	47.00	0.43	47.43	74.00	-26.57	245	111	Peak

Middle channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	35.32	-3.52	31.80	54.00	-22.20	141	196	Average
4882.000	48.31	-3.52	44.79	74.00	-29.21	141	196	Peak
7323.000	33.11	0.53	33.64	54.00	-20.36	100	13	Average
7323.000	47.11	0.53	47.64	74.00	-26.36	100	13	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4882.000	33.91	-3.52	30.39	54.00	-23.61	120	241	Average
4882.000	47.77	-3.52	44.25	74.00	-29.75	120	241	Peak
7323.000	30.34	0.53	30.87	54.00	-23.13	156	305	Average
7323.000	45.55	0.53	46.08	74.00	-27.92	156	305	Peak

High channel

Horizontal

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	36.19	-3.67	32.52	54.00	-21.48	131	195	Average
4960.000	49.31	-3.67	45.64	74.00	-28.36	131	195	Peak
7440.000	33.78	0.28	34.06	54.00	-19.94	103	306	Average
7440.000	47.47	0.28	47.75	74.00	-26.25	103	306	Peak

Vertical

Freq.	Reading	Factor	Level	Limit	Margin	Height	Degree	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	(cm)	(°)	
4960.000	34.90	-3.67	31.23	54.00	-22.77	121	257	Average
4960.000	48.34	-3.67	44.67	74.00	-29.33	121	257	Peak
7440.000	31.00	0.28	31.28	54.00	-22.72	139	289	Average
7440.000	45.60	0.28	45.88	74.00	-28.12	139	289	Peak

Note:

Level = Reading + Factor.

Margin = Level – Limit.

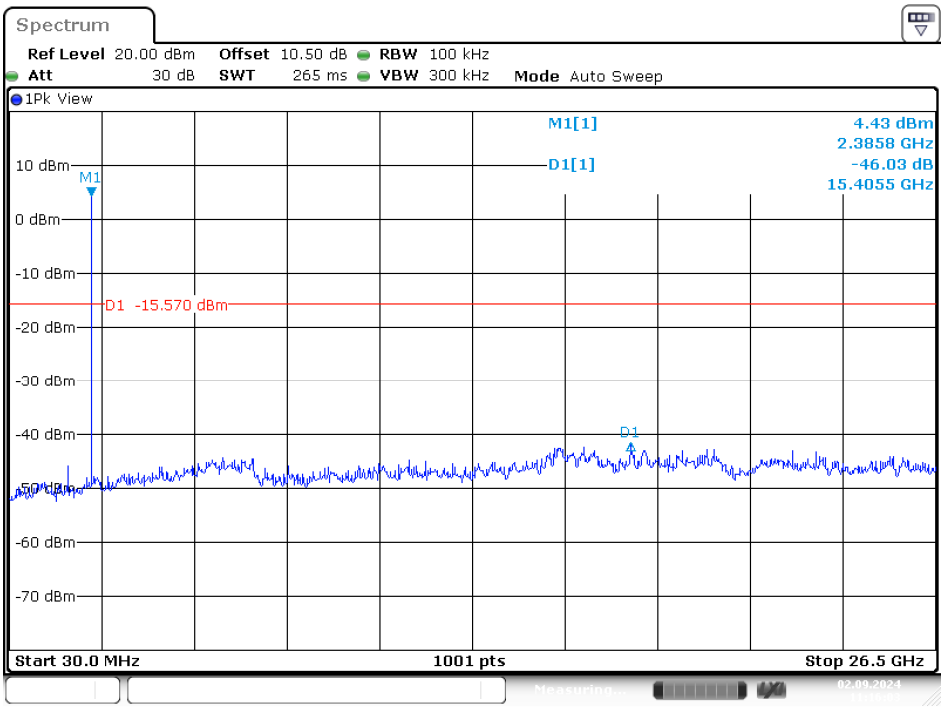
Factor = Antenna Factor + Cable Loss – Amplifier Gain.

Conducted Spurious Emissions:

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BR Mode (GFSK)				
Low	2402	46.03	≥ 20	PASS
Mid	2441	45.80	≥ 20	PASS
High	2480	46.61	≥ 20	PASS
EDR Mode (π/4-DQPSK):				
Low	2402	45.42	≥ 20	PASS
Mid	2441	42.44	≥ 20	PASS
High	2480	43.71	≥ 20	PASS
EDR Mode (8DPSK):				
Low	2402	44.85	≥ 20	PASS
Mid	2441	43.84	≥ 20	PASS
High	2480	45.00	≥ 20	PASS

BR Mode (GFSK)

Low Channel



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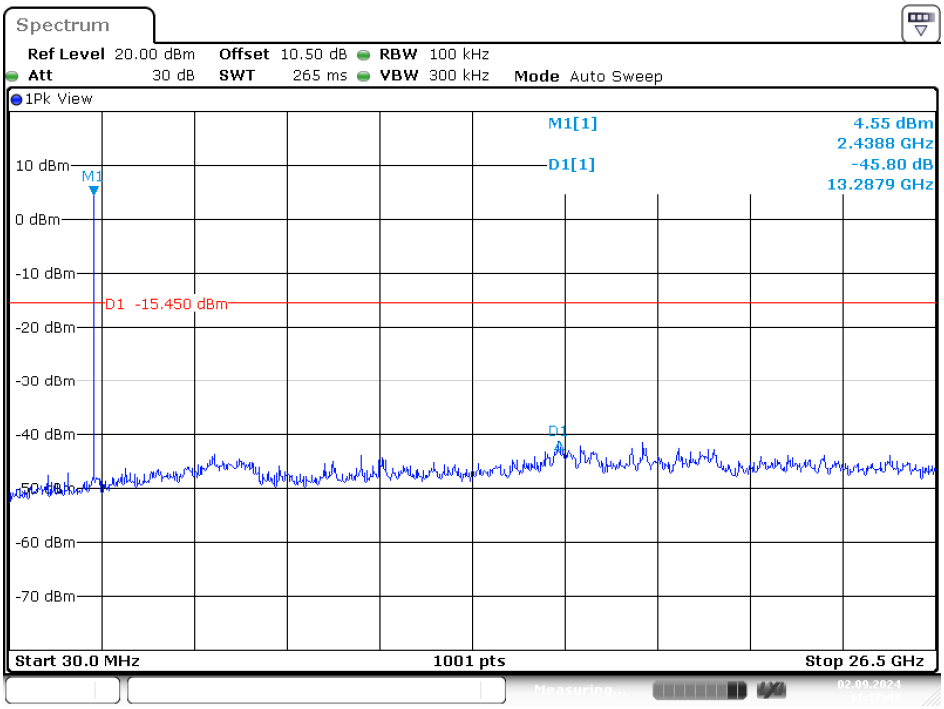
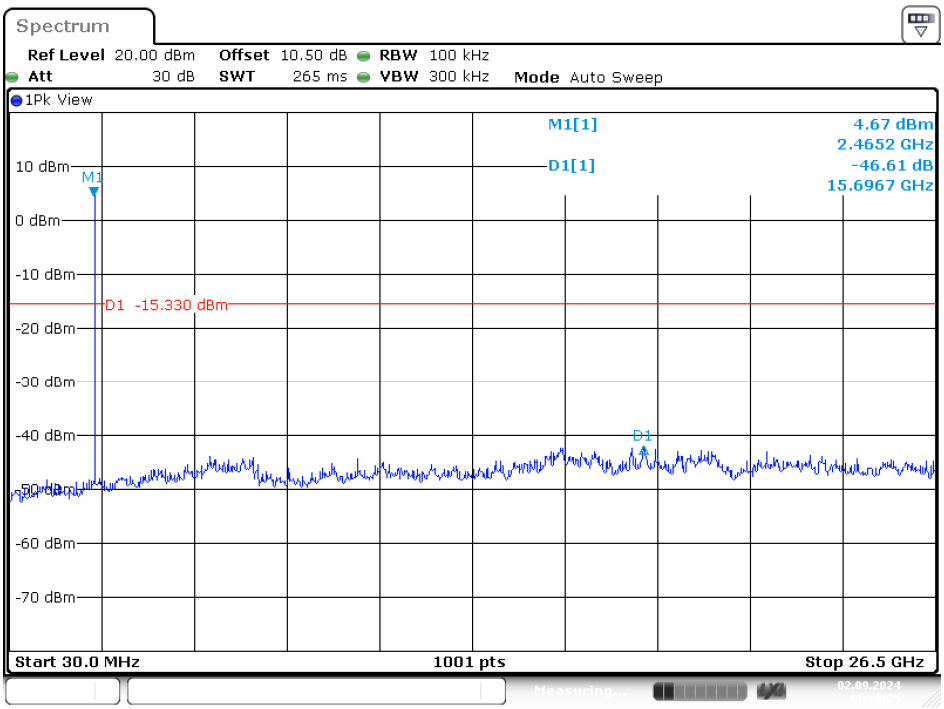
Middle Channel



Date: 2.SEP.2024 11:17:42

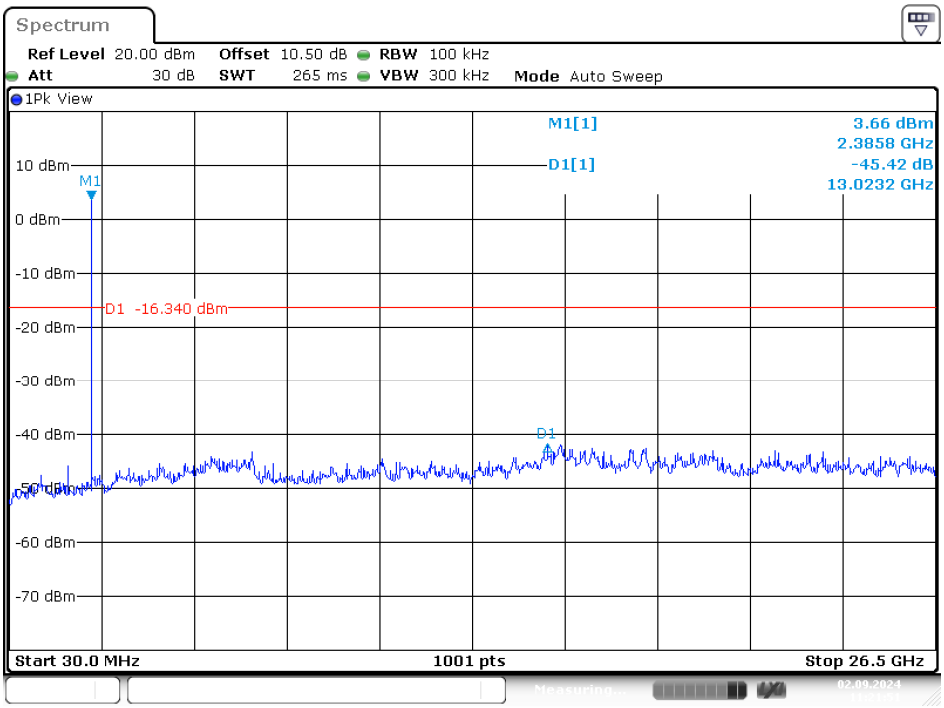
High Channel



Date: 2.SEP.2024 11:19:26

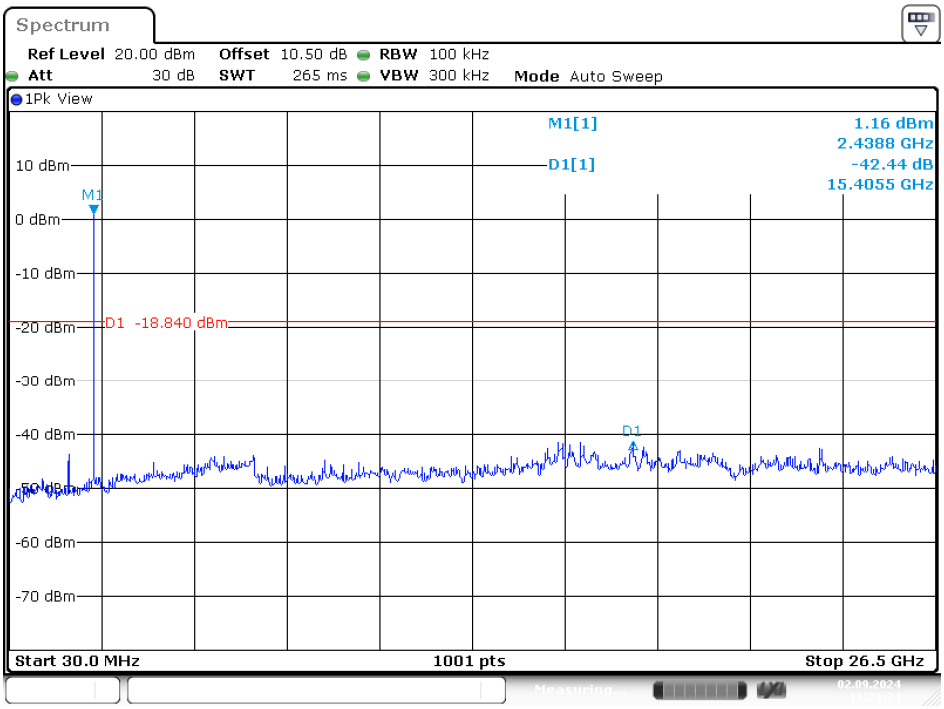
EDR Mode (π/4-DQPSK)

Low Channel



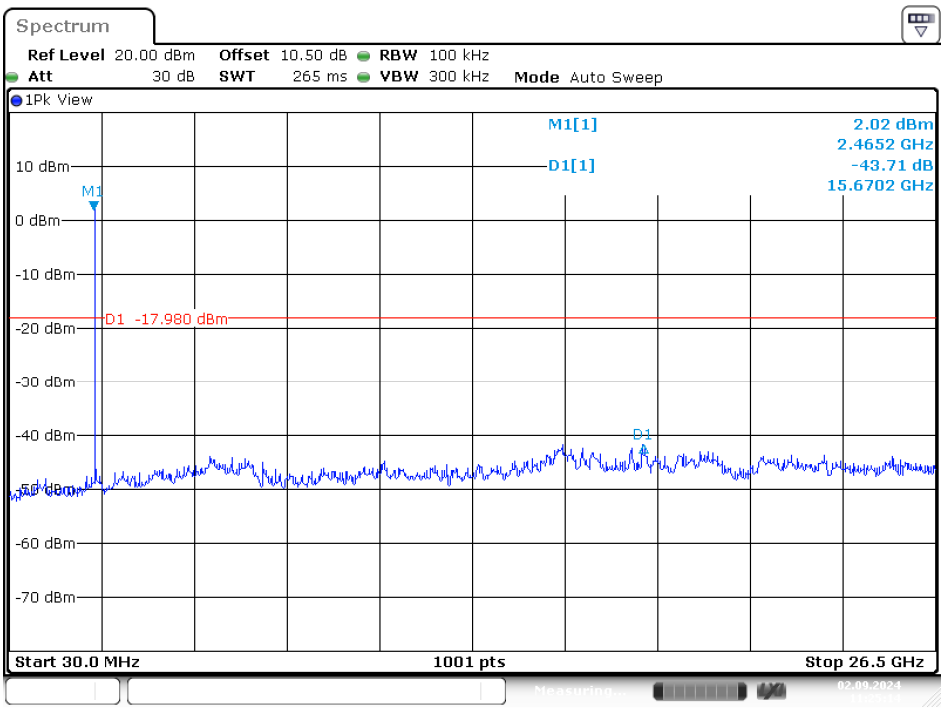
Date: 2.SEP.2024 11:21:52

Middle Channel



Date: 2.SEP.2024 11:23:25

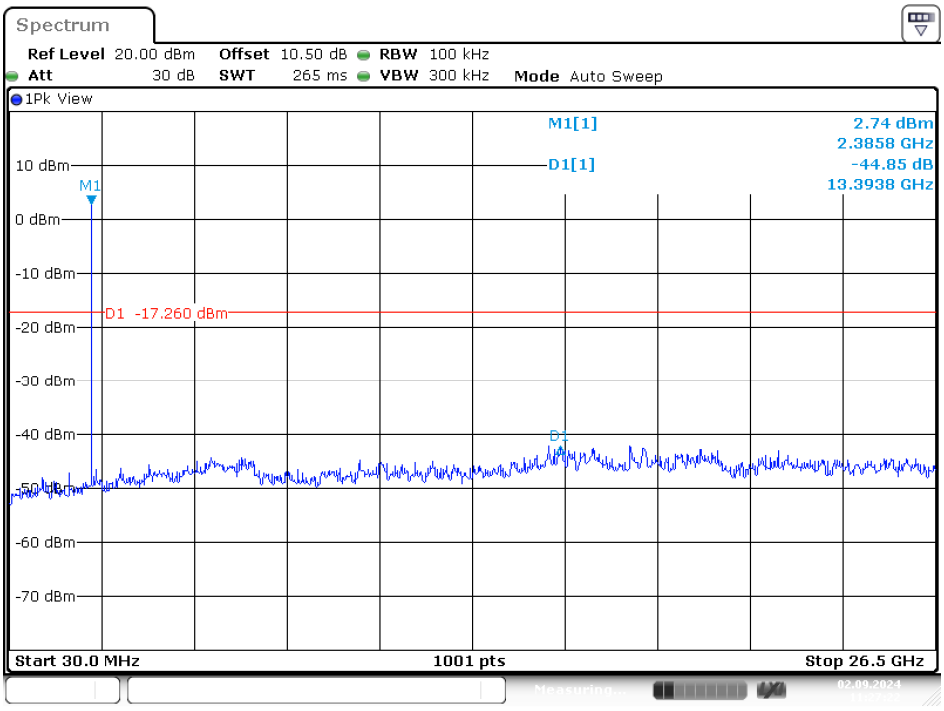
High Channel



Date: 2.SEP.2024 11:25:15

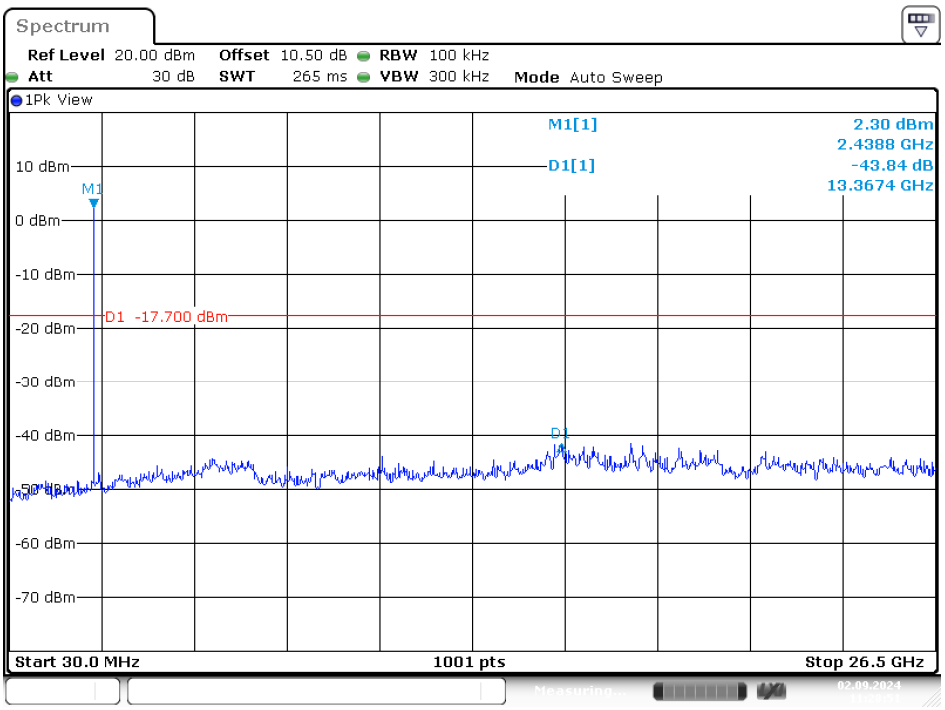
EDR Mode (8DPSK)

Low Channel



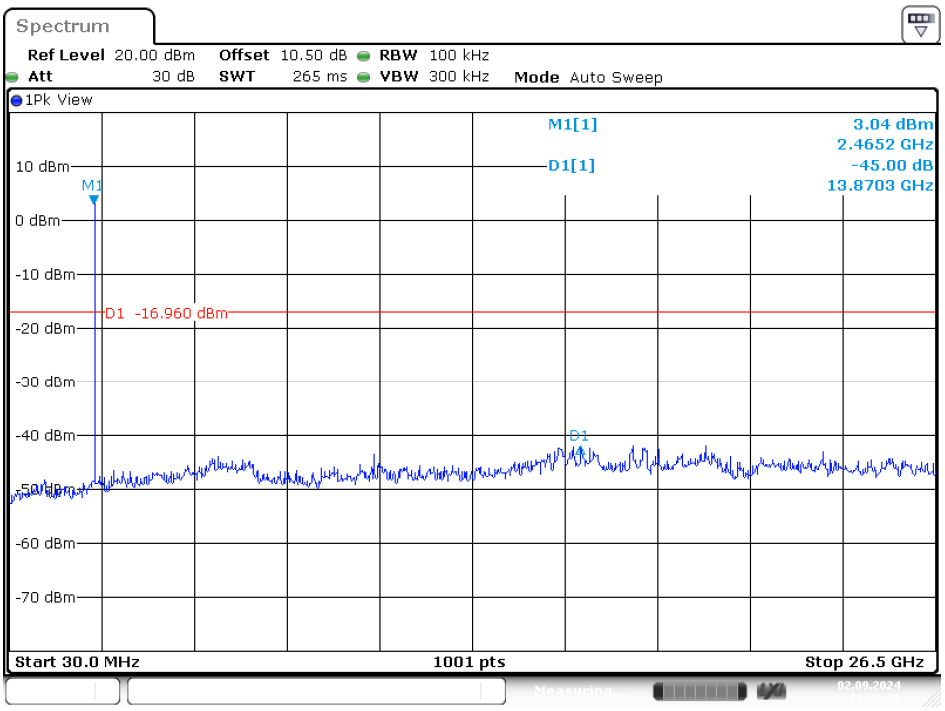
Date: 2.SEP.2024 11:27:23

Middle Channel



Date: 2.SEP.2024 11:28:51

High Channel



Date: 2.SEP.2024 11:30:38

9. FCC §15.247(a)(1) – 20 dB Emission Bandwidth

9.1. Applicable Standard

According to FCC §15.247(a) (1) the maximum 20 dB bandwidth of the hopping channel shall be presented.

9.2. Test Procedure

According to ANSI C63.10-2013, section 6.9.2

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3 Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

4. Repeat above procedures until all frequencies measured were complete.

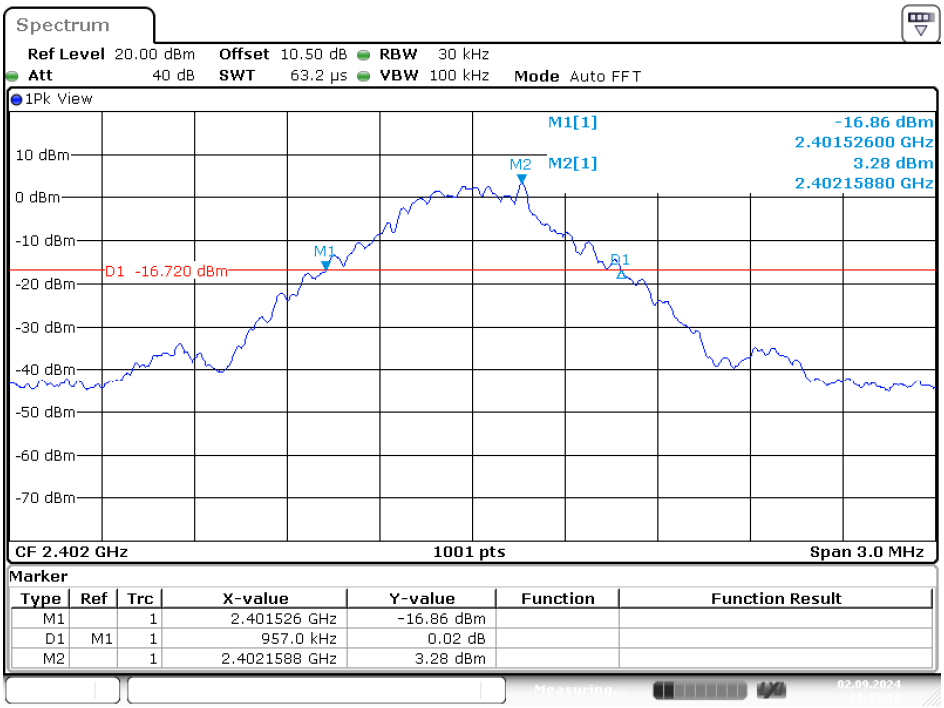
9.3. Test Results

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BR Mode (GFSK)		
Low	2402	0.96
Middle	2441	0.97
High	2480	0.96
EDR Mode (π/4-DQPSK)		
Low	2402	1.33
Middle	2441	1.34
High	2480	1.34
EDR Mode (8DPSK)		
Low	2402	1.31
Middle	2441	1.31
High	2480	1.31

Please refer to the following plots

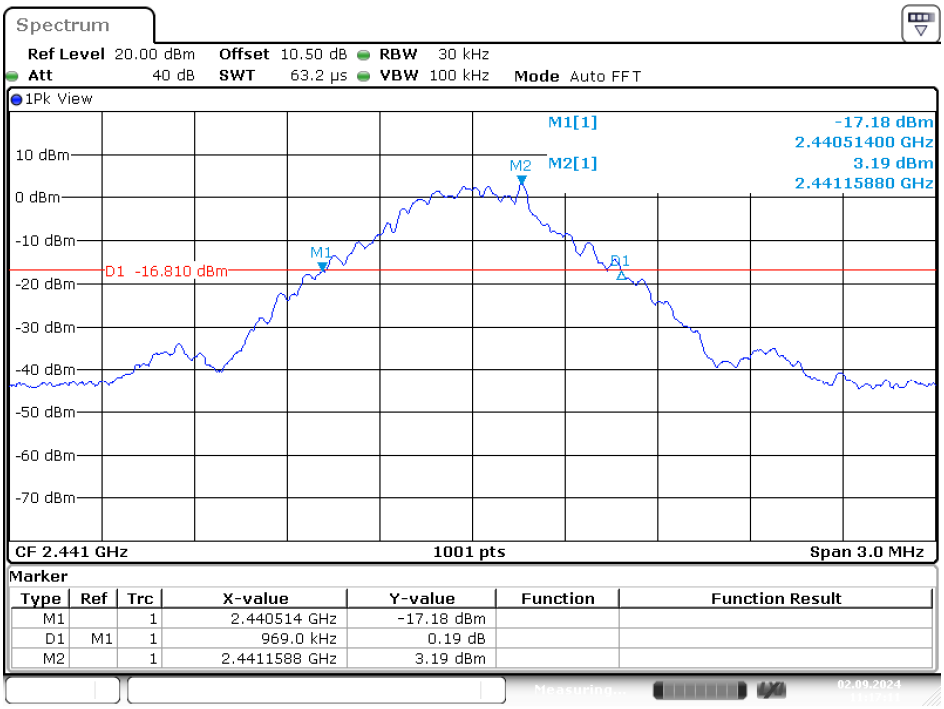
BR Mode (GFSK)

Low Channel



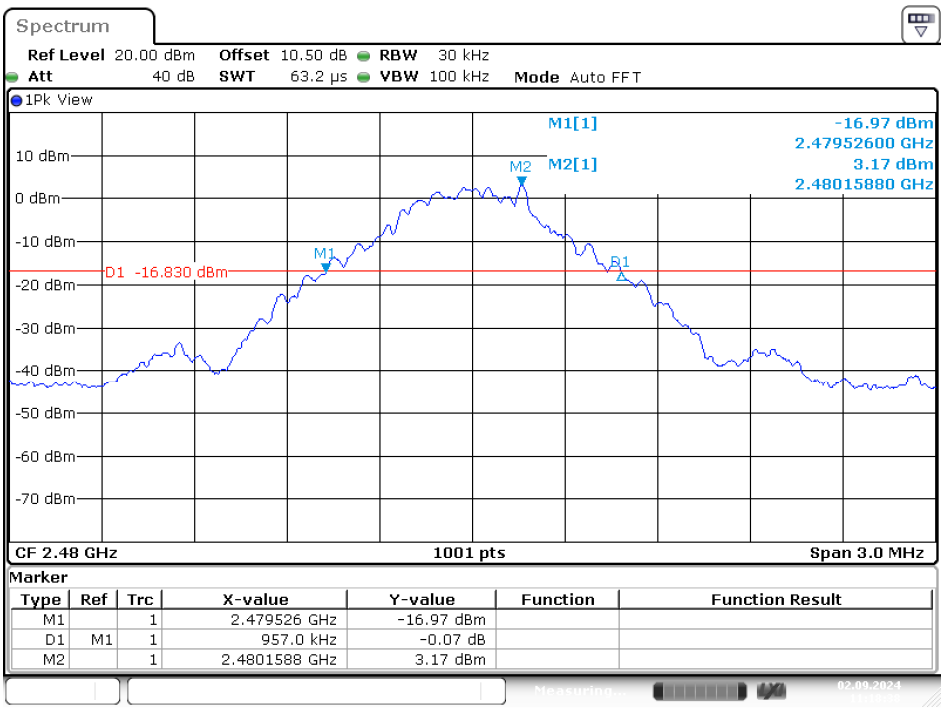
Date: 2.SEP.2024 11:15:17

Middle Channel



Date: 2.SEP.2024 11:17:11

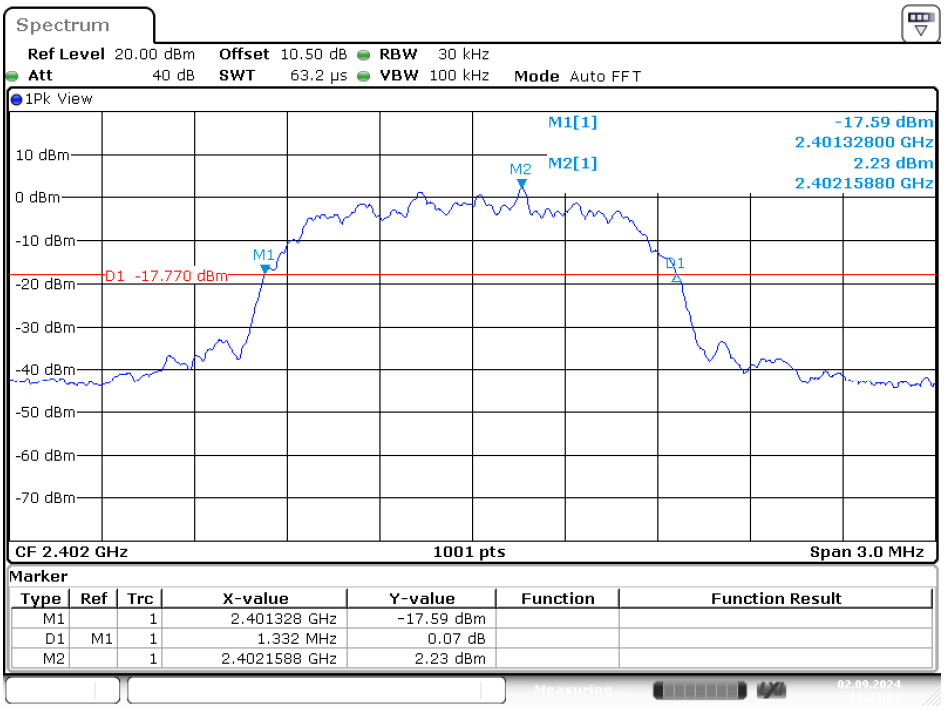
High Channel



Date: 2.SEP.2024 11:18:39

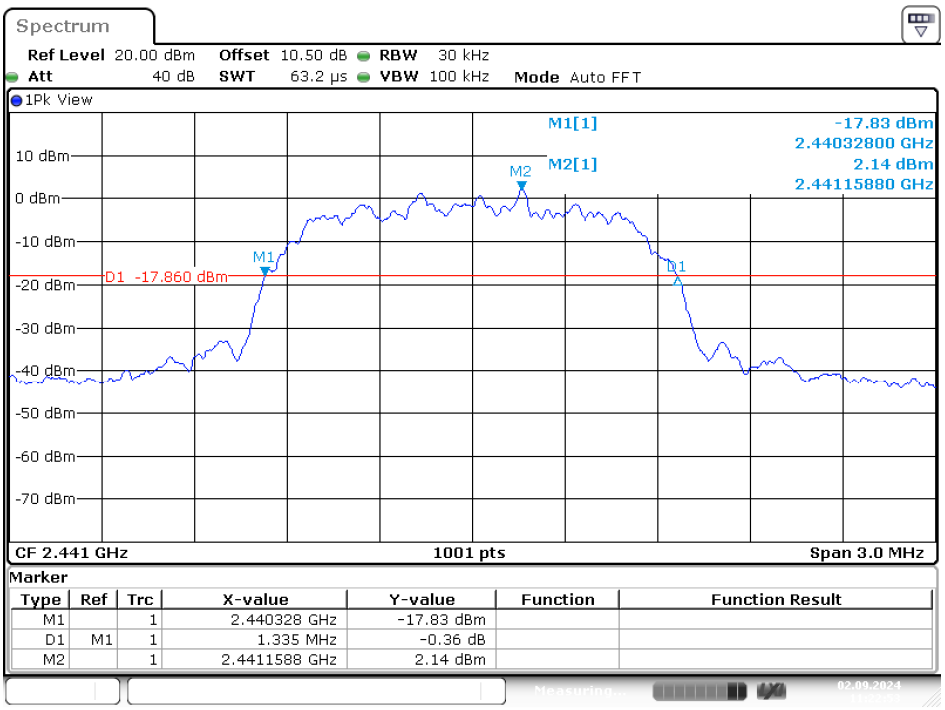
EDR Mode (π/4-DQPSK)

Low Channel



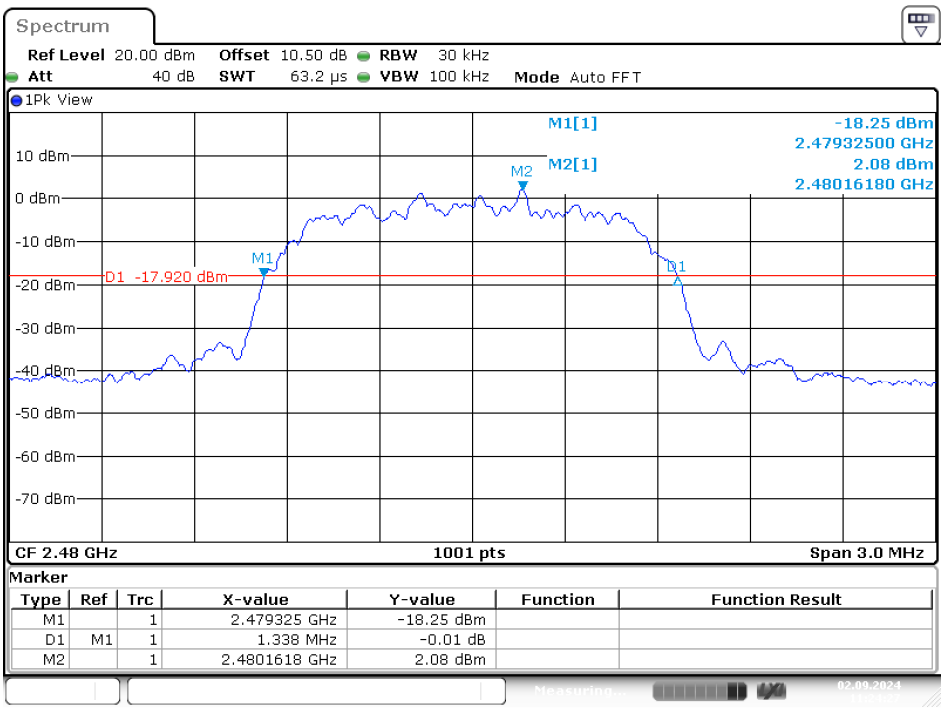
Date: 2.SEP.2024 11:21:05

Middle Channel



Date: 2.SEP.2024 11:22:54

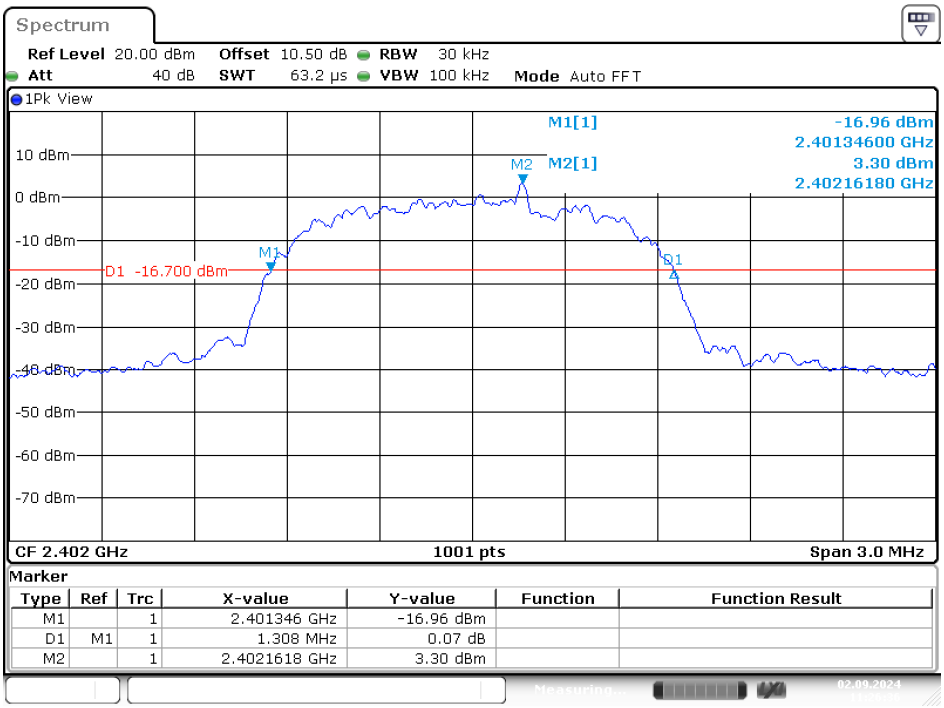
High Channel



Date: 2.SEP.2024 11:24:28

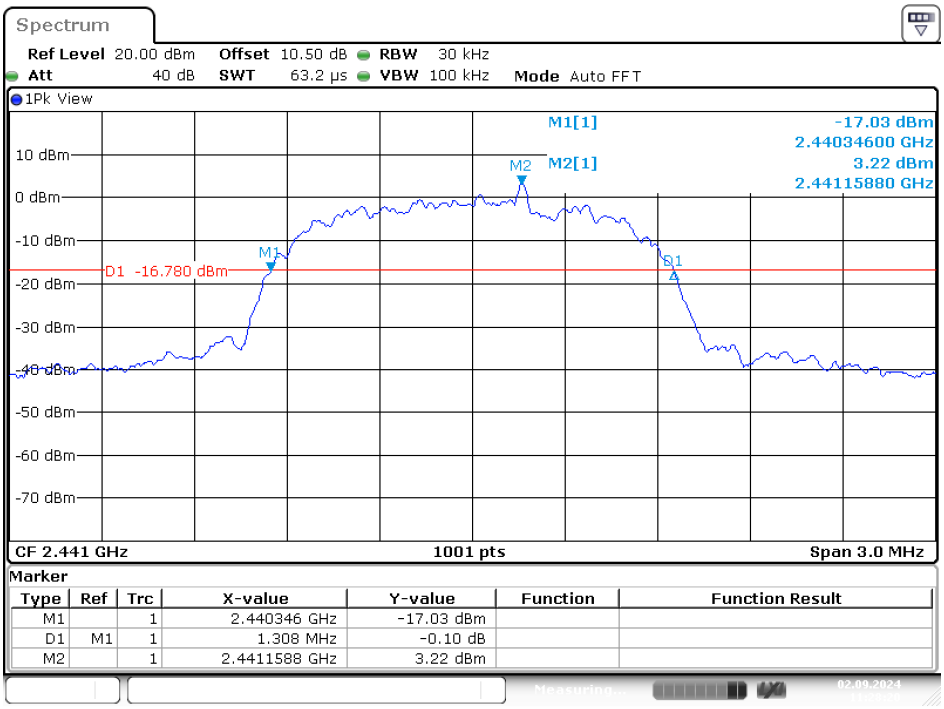
EDR Mode (8DPSK)

Low Channel



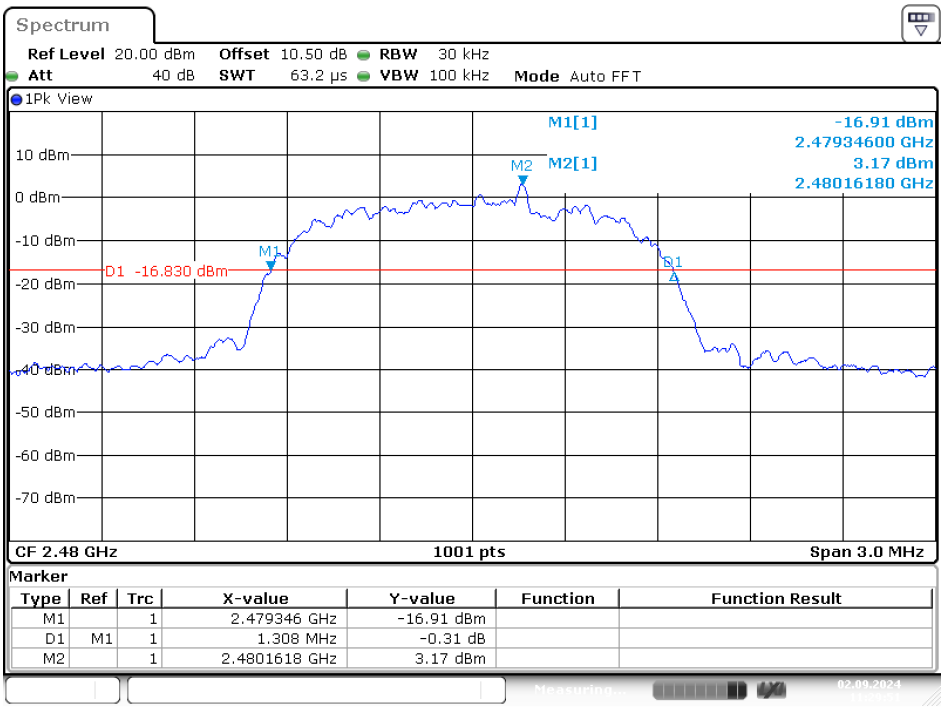
Date: 2.SEP.2024 11:26:36

Middle Channel



Date: 2.SEP.2024 11:28:21

High Channel



Date: 2.SEP.2024 11:29:52

10. FCC §15.247(a)(1) – Channel Separation Test

10.1. Applicable Standard

According to FCC §15.247(a) (1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

10.2. Test Procedure

According to ANSI C63.10-2013, section 7.8.2

1. Set the EUT in transmitting mode, max hold the channel.
2. Set the adjacent channel of the EUT and max hold another trace.
3. Measure the channel separation.

10.3. Test Results

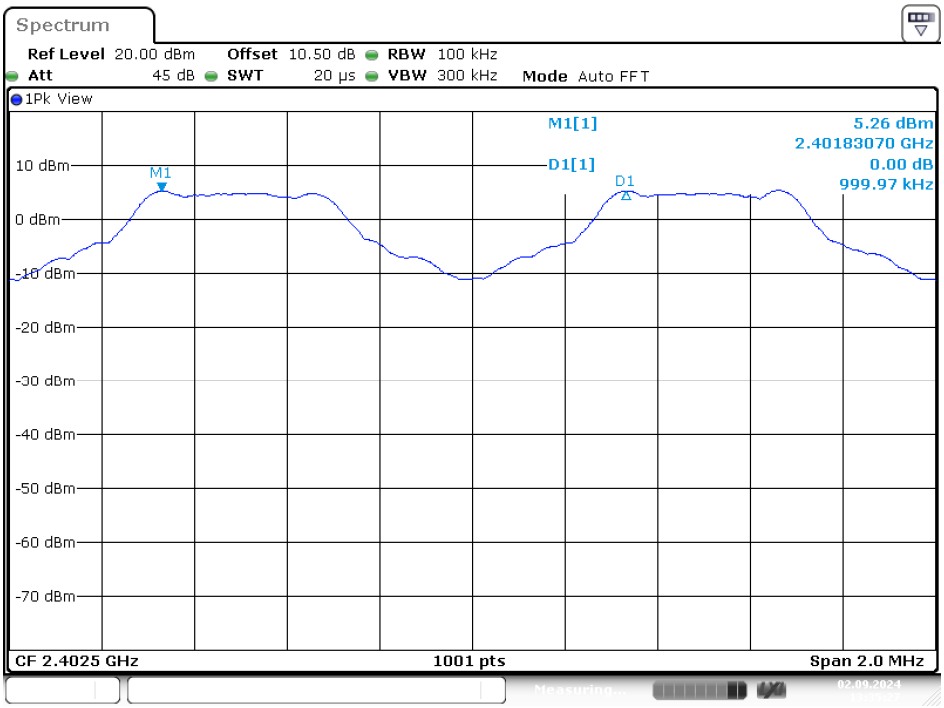
Channel	Channel Separation (MHz)	20 dBc BW (MHz)	Two-thirds of the 20 dB bandwidth (MHz)	Channel Separation Limit	Result
BR Mode (GFSK)					
Low	1.00	1.33	0.88	>two-thirds of the 20 dB bandwidth	Compliance
Middle	1.00	1.34	0.89	>two-thirds of the 20 dB bandwidth	Compliance
High	0.99	1.34	0.89	>two-thirds of the 20 dB bandwidth	Compliance

Under the test results of BR Mode (GFSK) mode and EDR Mode (π/4-DQPSK, 8DPSK), the worst-case is BR Mode (GFSK) mode.

Please refer to the following plots.

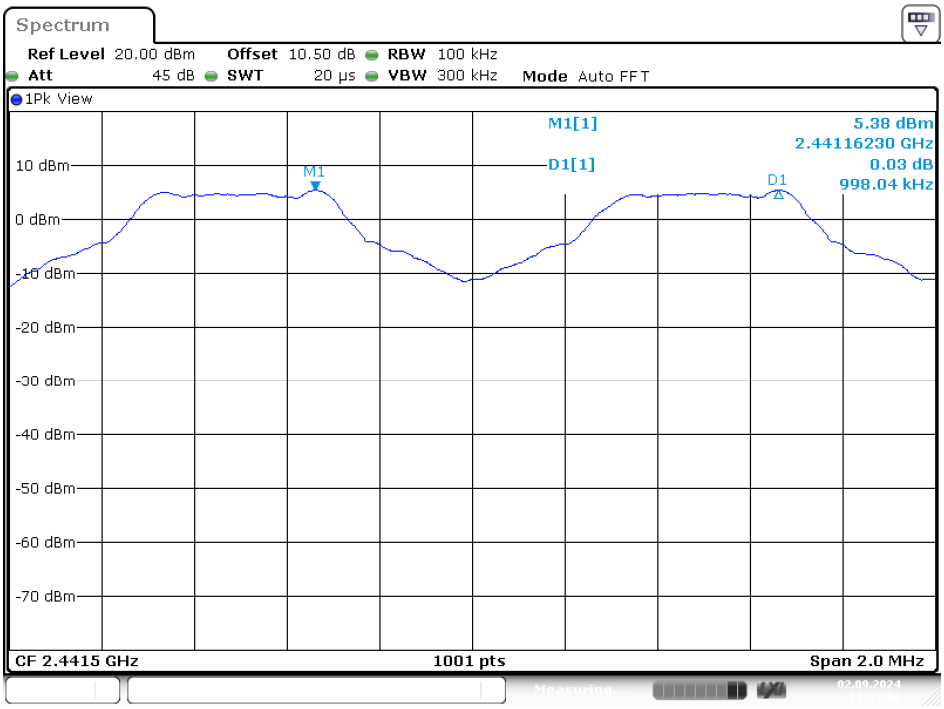
BR Mode (GFSK)

Low Channel



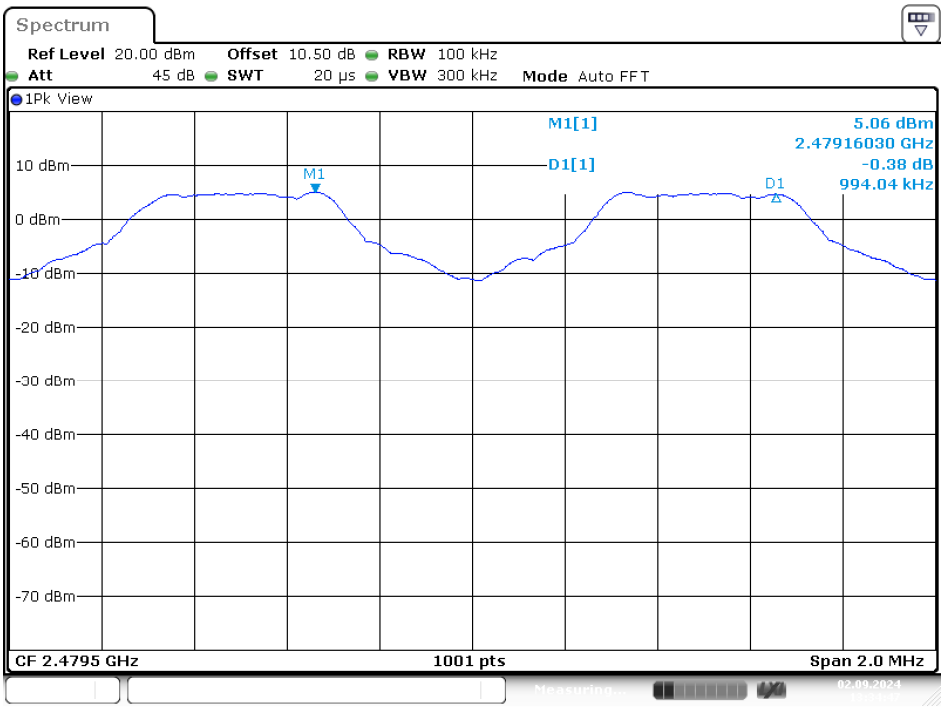
Date: 2.SEP.2024 13:35:27

Middle Channel



Date: 2.SEP.2024 13:35:07

High Channel



Date: 2.SEP.2024 13:34:47

11. FCC§15.247(a)(1)(iii) –Time of Occupancy (Dwell Time)

11.1. Applicable Standard

According to FCC §15.247(a) (1) (iii).

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

11.2. Test Procedure

According to ANSI C63.10-2013, section 7.8.4

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel RBW ≤ channel spacing and where possible RBW should be set >> 1/T, where T is the expected dwell time per channel Sweep = as necessary to capture the entire dwell time per hopping channel Detector function = peak Trace = max hold

Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements.

Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

(Number of hops in the period specified in the requirements) = (number of hops on spectrum analyzer) x (period specified in the requirements / analyzer sweep time)

The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified. If the number of hops in a specific time varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation.

11.3. Test Results

BR mode (GFSK)						
Mode	Pulse Time (ms)	Hopping Number	Period Time (s)	Total of Dwell (ms)	Limit (ms)	Result
DH1	0.377	320	31.6	120.64	<400	PASS
DH3	1.623	180	31.6	292.14	<400	PASS
DH5	2.85	120	31.6	342.00	<400	PASS
EDR mode (π/4-DQPSK)						
Mode	Pulse Time (ms)	Hopping Number	Period Time (s)	Total of Dwell (ms)	Limit (ms)	Result
2DH1	0.373	320	31.6	119.36	<400	PASS
2DH3	1.626	170	31.6	276.42	<400	PASS
2DH5	2.865	90	31.6	257.85	<400	PASS
EDR mode (8DPSK)						
Mode	Pulse Time (ms)	Hopping Number	Period Time (s)	Total of Dwell (ms)	Limit (ms)	Result
3DH1	0.374	320	31.6	119.68	<400	PASS
3DH3	1.629	180	31.6	293.22	<400	PASS
3DH5	2.88	110	31.6	316.80	<400	PASS

Note 1: A period time = 0.4*79 = 31.6 (s), Total of Dwell=Pulse Time * Hopping Number

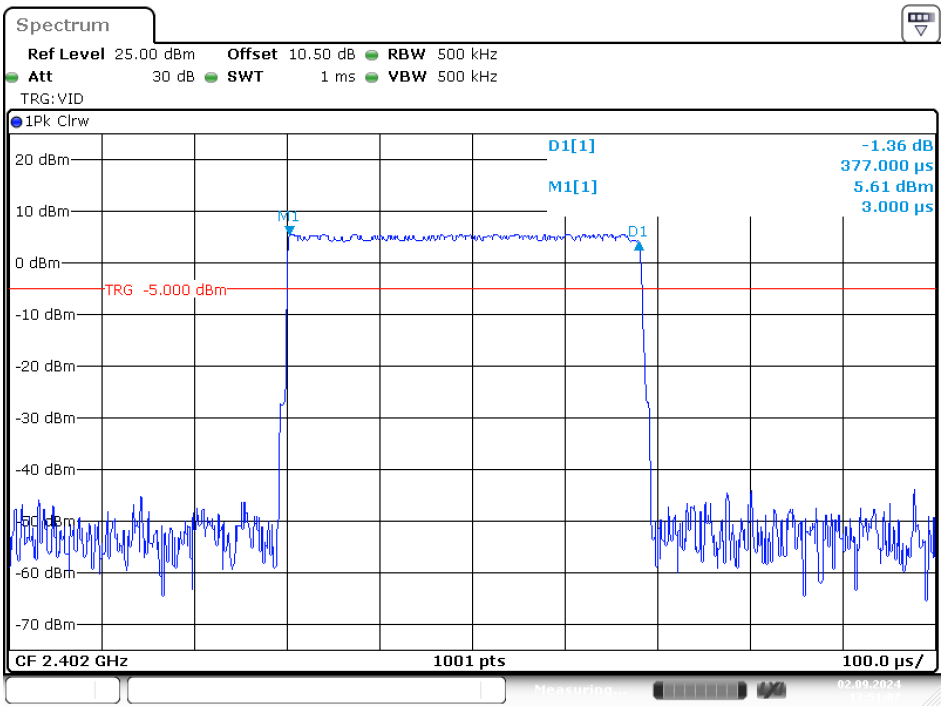
Note 2: Hopping Number = Hopping Number/10 * 10

Note 3: Hopping Number/10 = Total of highest signals in 3.16s. (Second high signals were other channel)

Please refer to the following plots

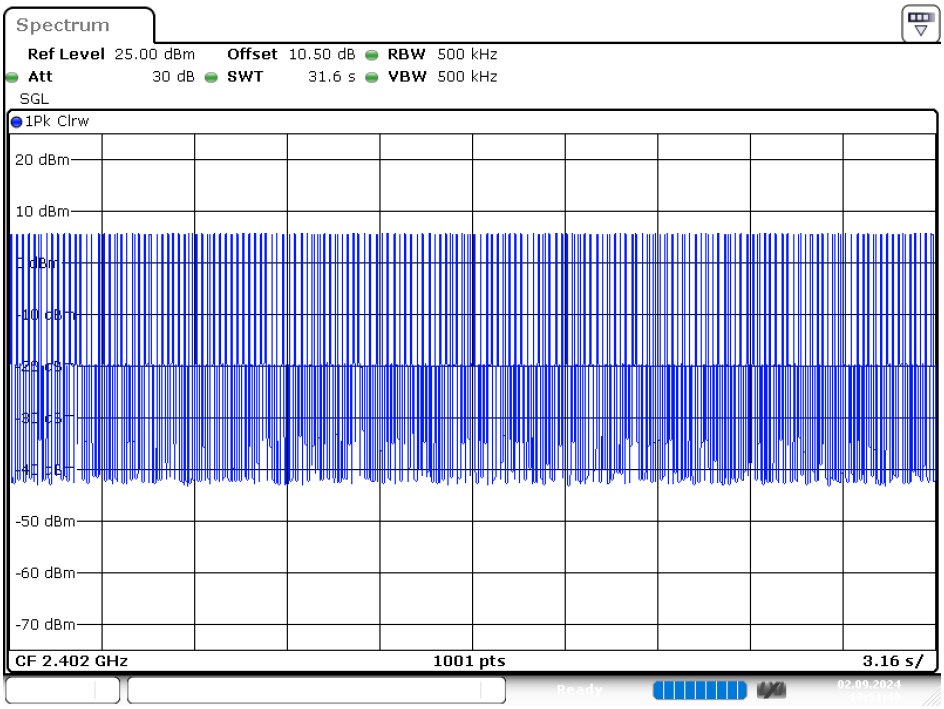
BR Mode (GFSK)

DH1: Pulse Width



Date: 2.SEP.2024 13:51:07

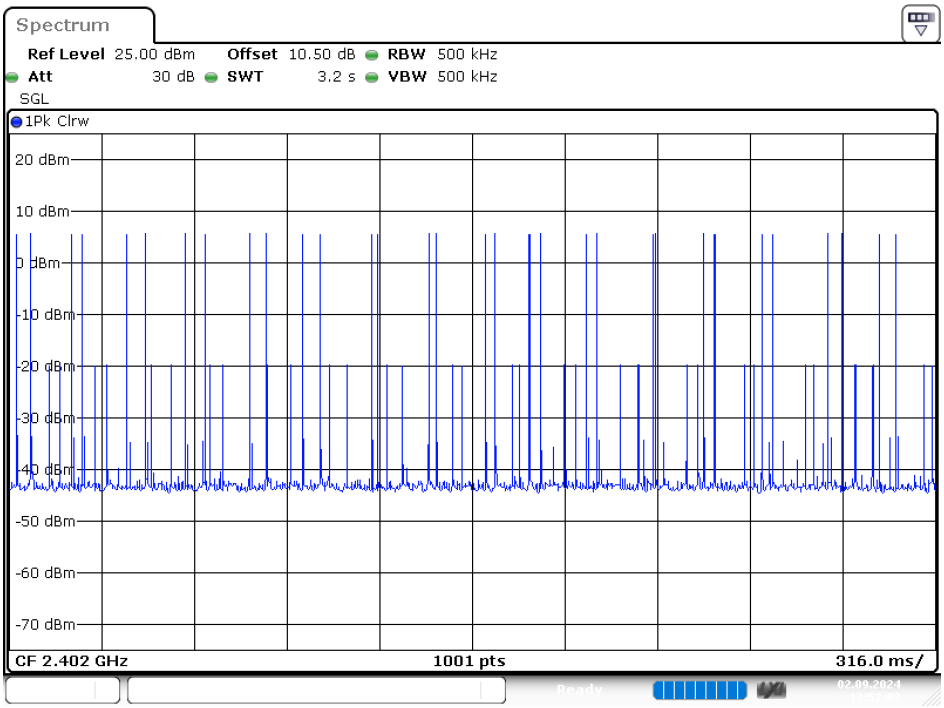
DH1: Hopping Number



Date: 2.SEP.2024 13:51:40

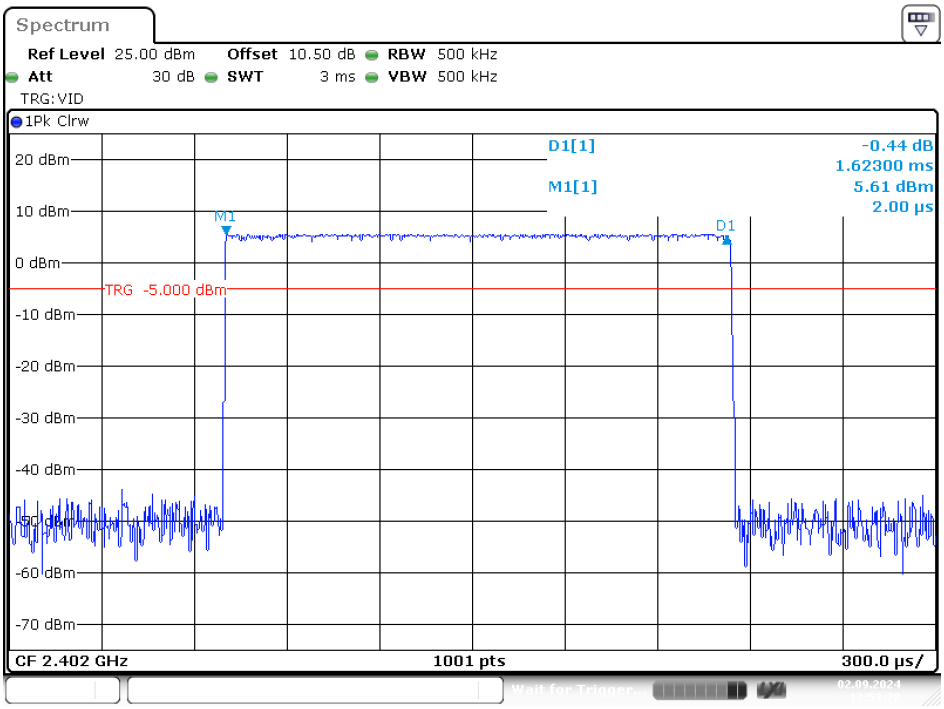
DH1: Hopping Number /10

(Hopping Number = 32 in 1/10 period of highest signals, Second High signals were other channel)



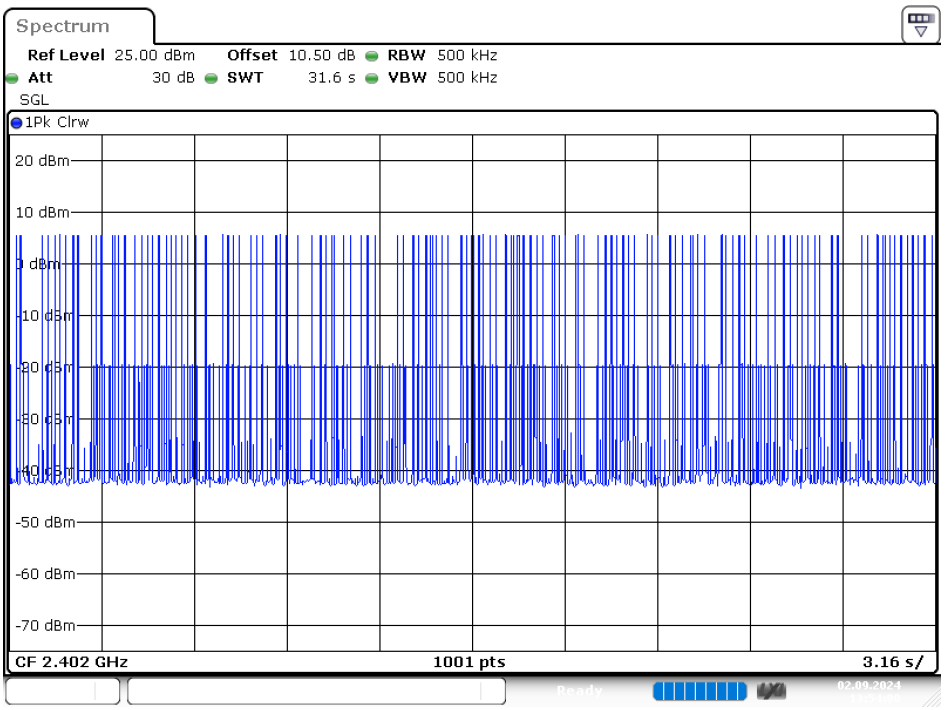
Date: 2.SEP.2024 13:52:02

DH3: Pulse Width



Date: 2.SEP.2024 13:53:28

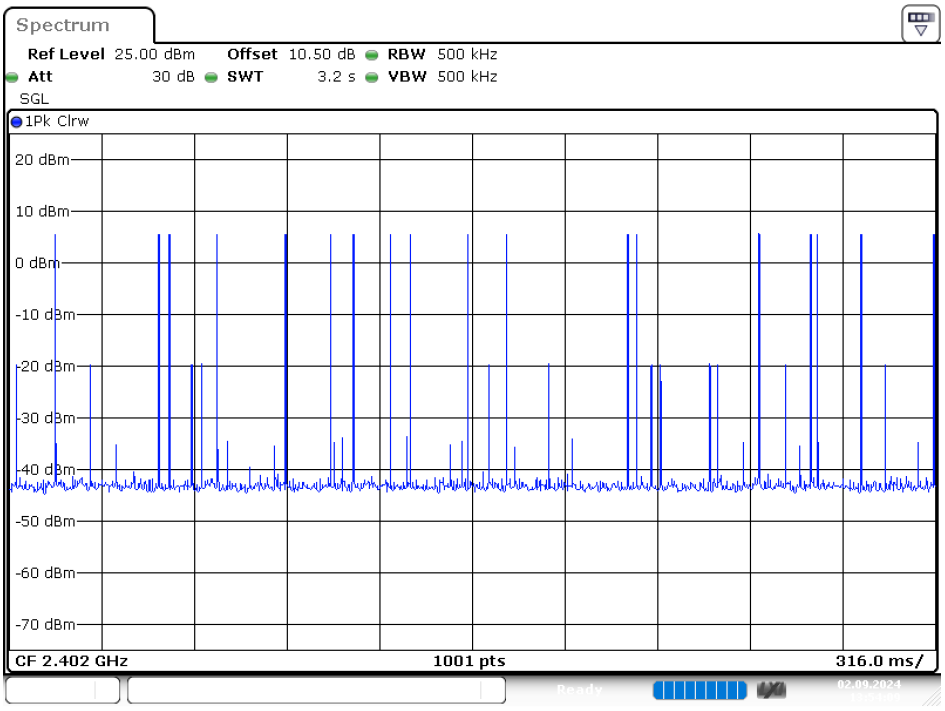
DH3: Hopping Number



Date: 2.SEP.2024 13:54:00

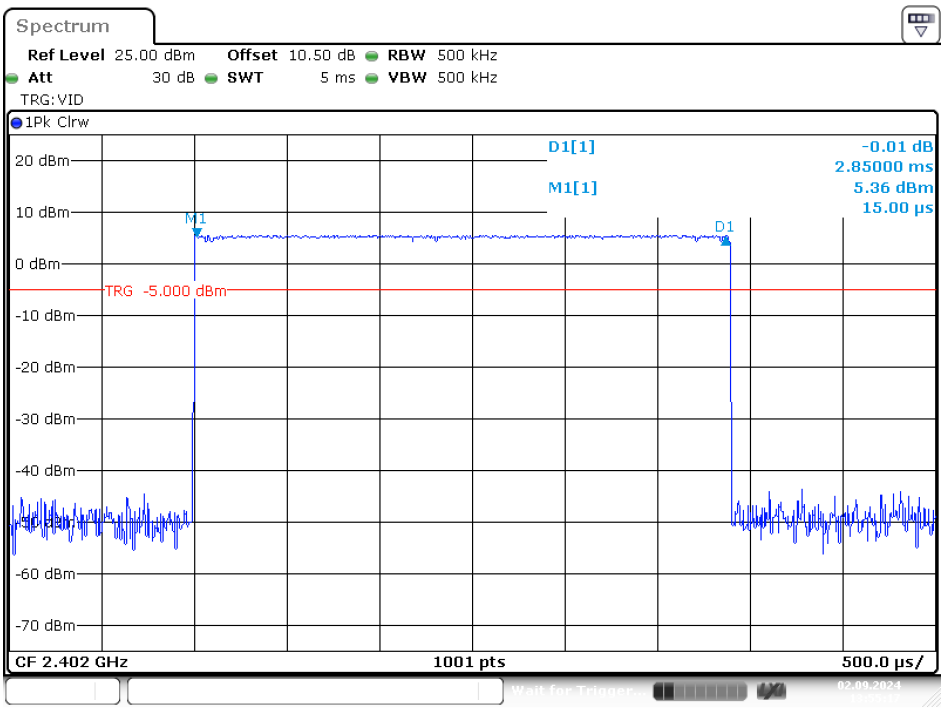
DH3: Hopping Number /10

(Hopping Number = 18 in 1/10 period of highest signals, Second High signals were other channel)



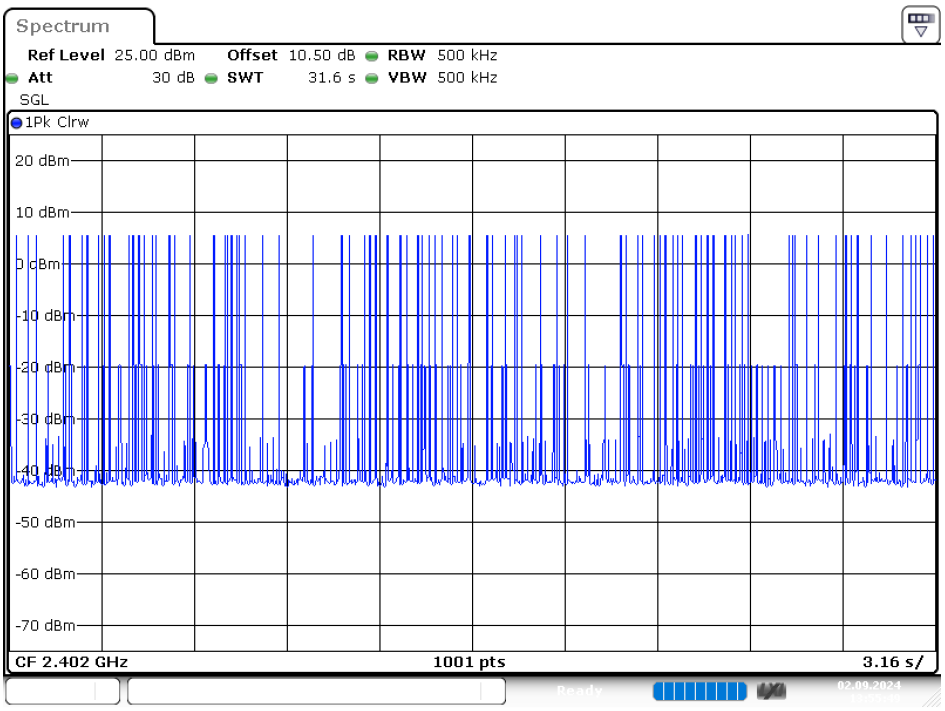
Date: 2.SEP.2024 13:54:09

DH5: Pulse Width



Date: 2.SEP.2024 13:55:17

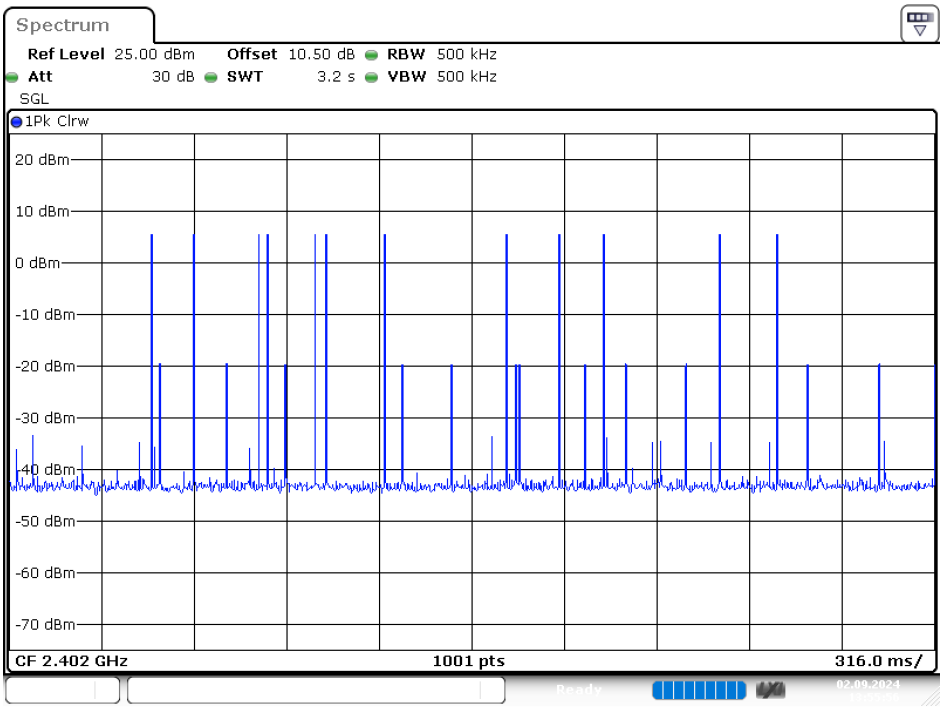
DH5: Hopping Number



Date: 2.SEP.2024 13:55:49

DH5: Hopping Number /10

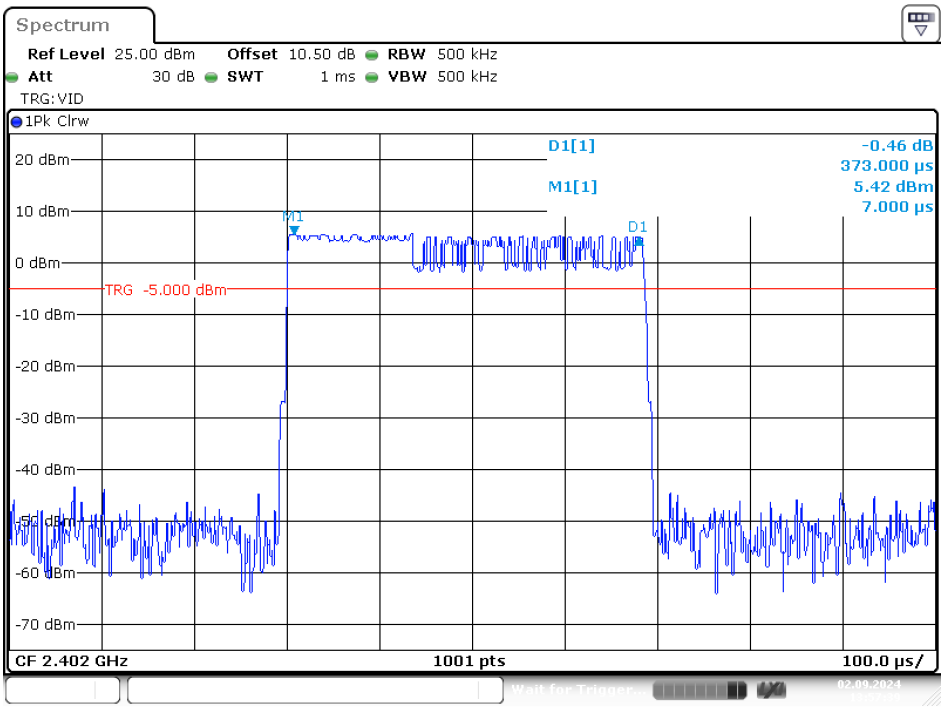
(Hopping Number = 12 in 1/10 period of highest signals, Second High signals were other channel)



Date: 2.SEP.2024 13:55:56

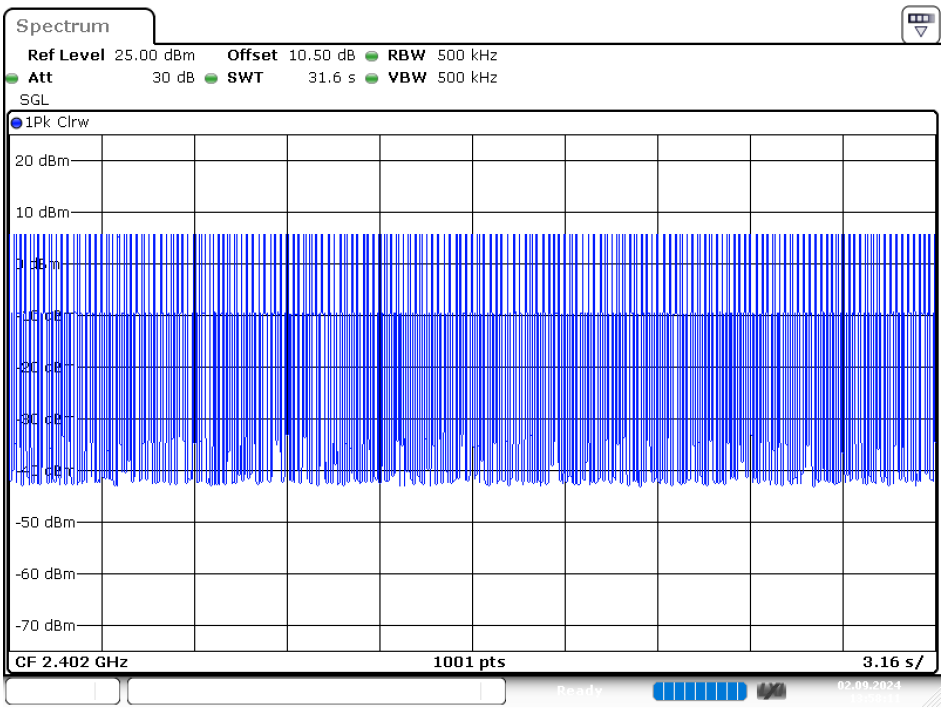
EDR Mode (π/4-DQPSK)

2DH1: Pulse Width



Date: 2.SEP.2024 13:57:39

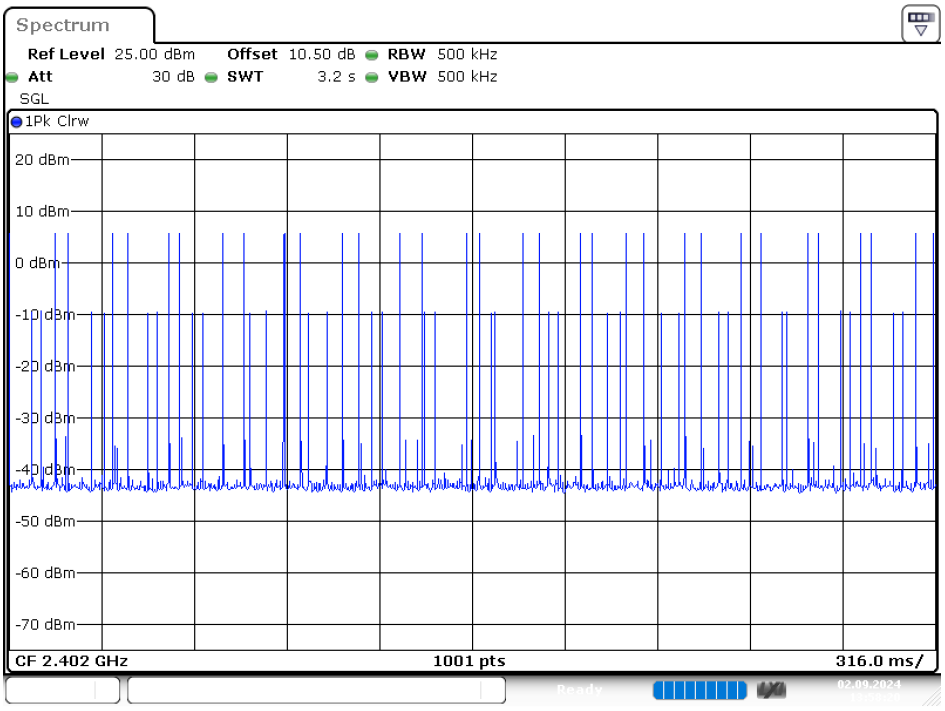
2DH1: Hopping Number



Date: 2.SEP.2024 13:58:11

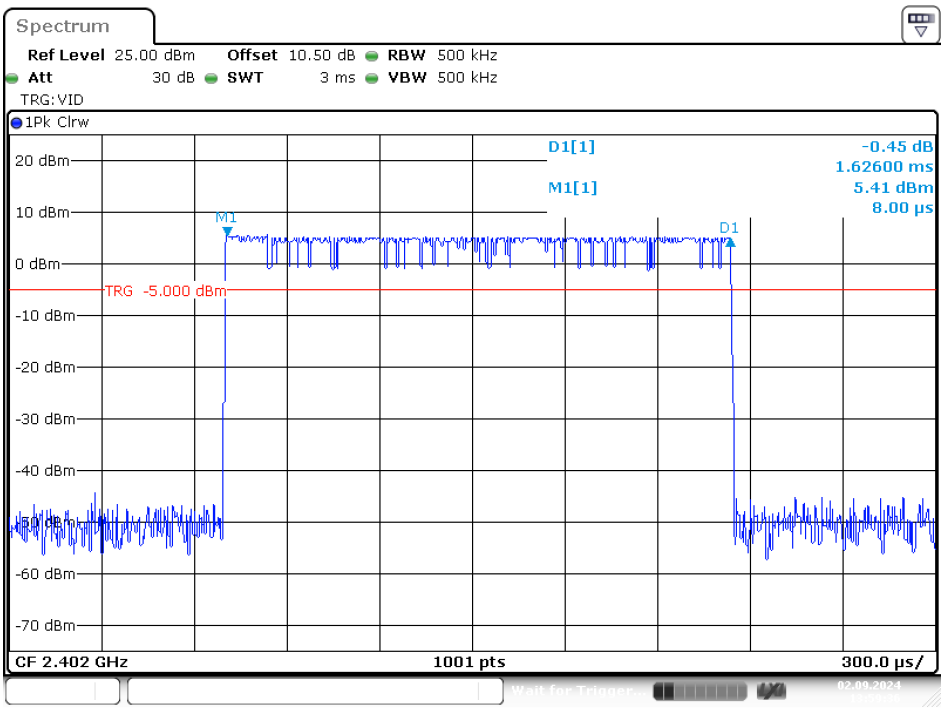
2DH1: Hopping Number /10

(Hopping Number = 32 in 1/10 period of highest signals, Second High signals were other channel)



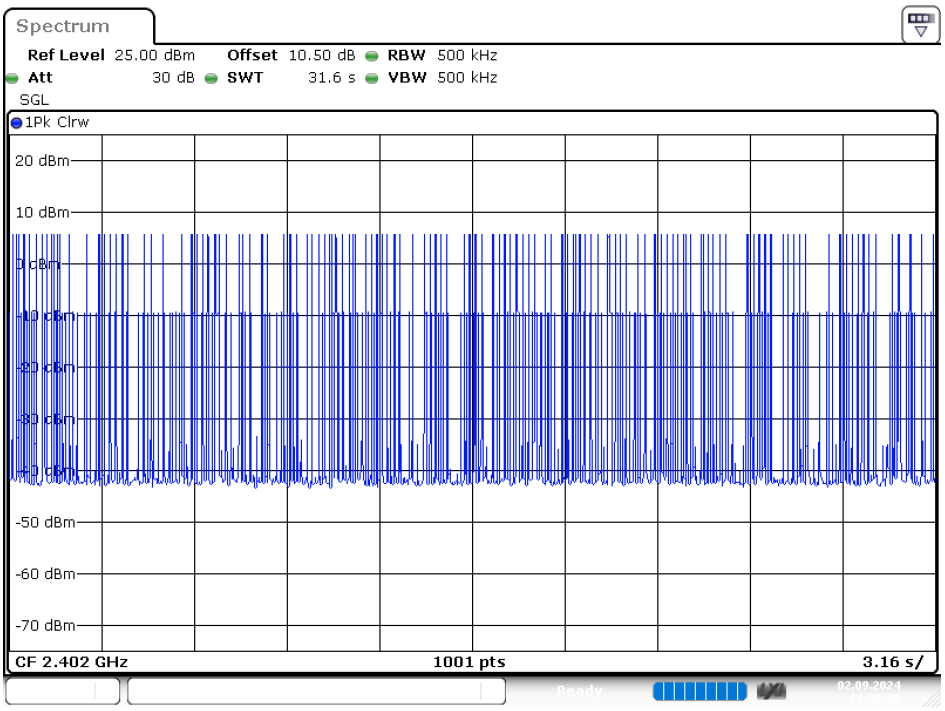
Date: 2.SEP.2024 13:58:20

2DH3: Pulse Width



Date: 2.SEP.2024 13:59:35

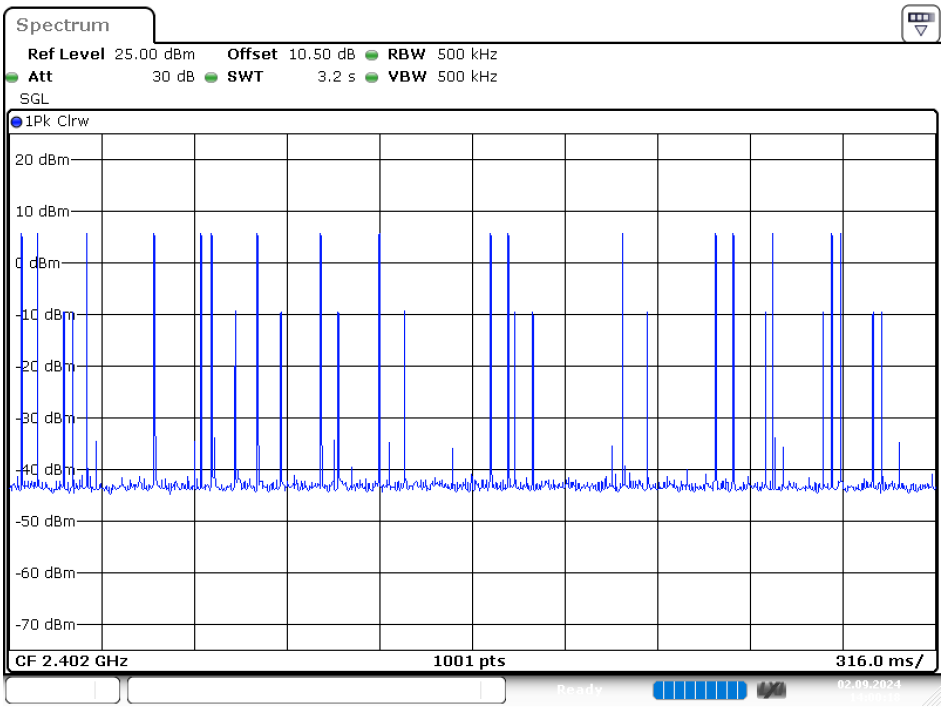
2DH3: Hopping Number



Date: 2.SEP.2024 14:00:08

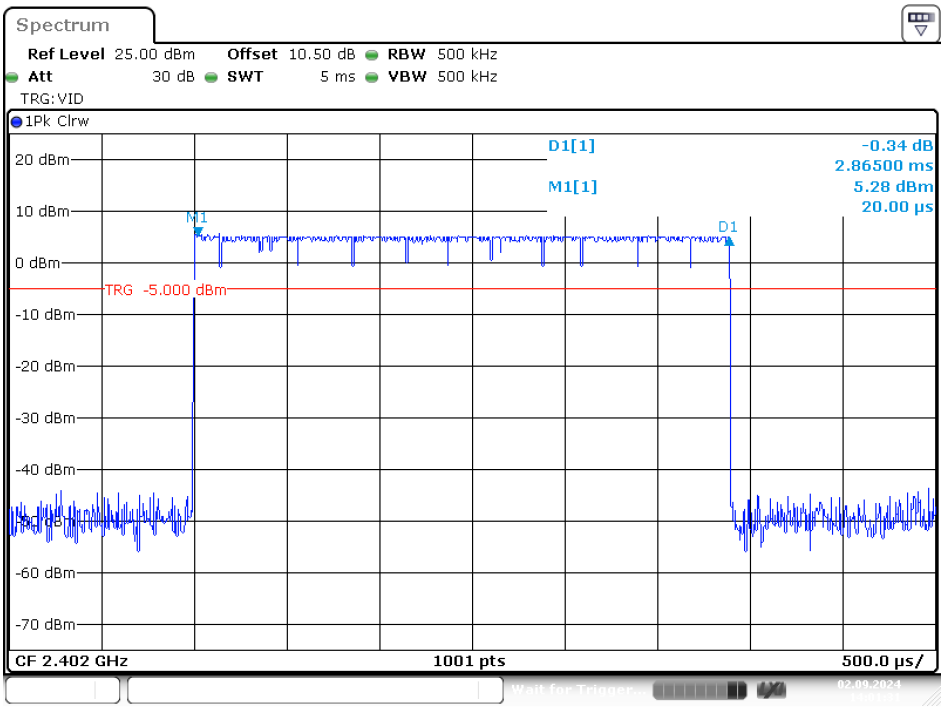
2DH3: Hopping Number /10

(Hopping Number = 17 in 1/10 period of highest signals, Second High signals were other channel)



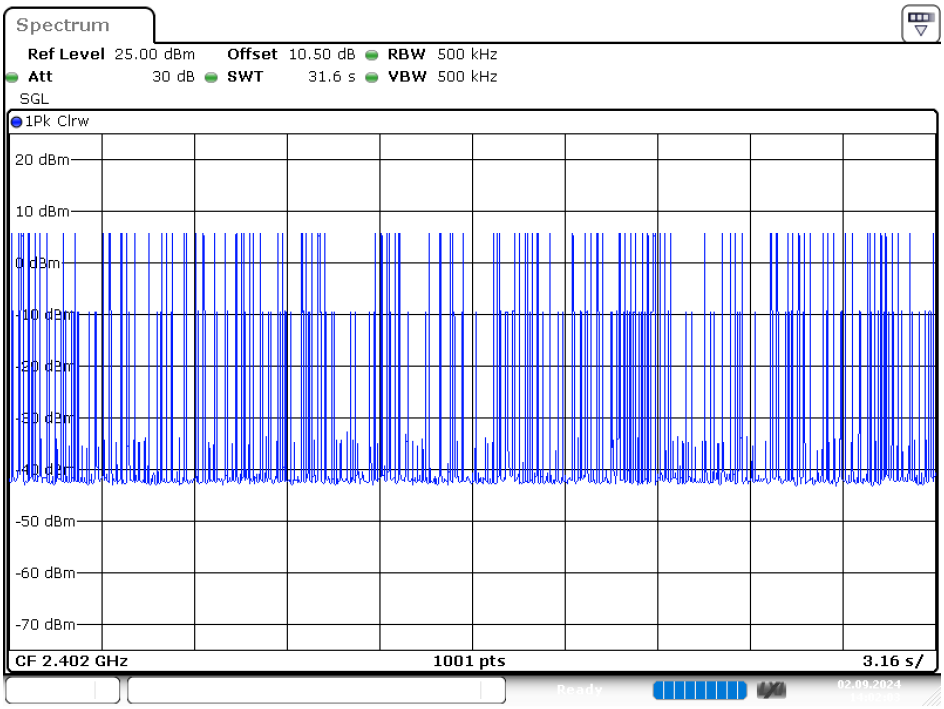
Date: 2.SEP.2024 14:00:17

2DH5: Pulse Width



Date: 2.SEP.2024 14:01:31

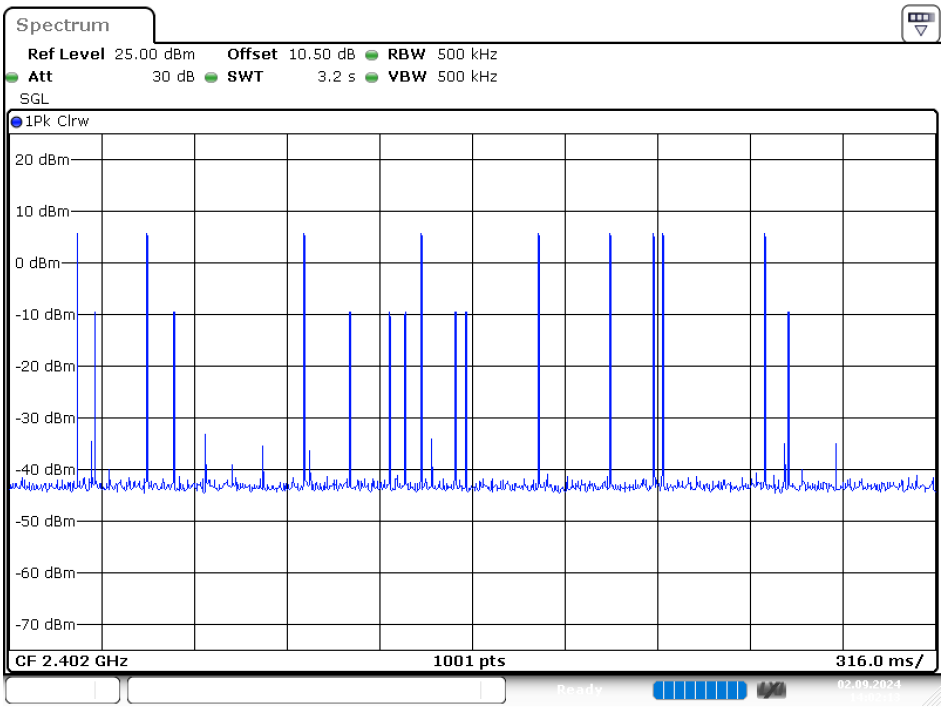
2DH5: Hopping Number



Date: 2.SEP.2024 14:02:03

2DH5: Hopping Number /10

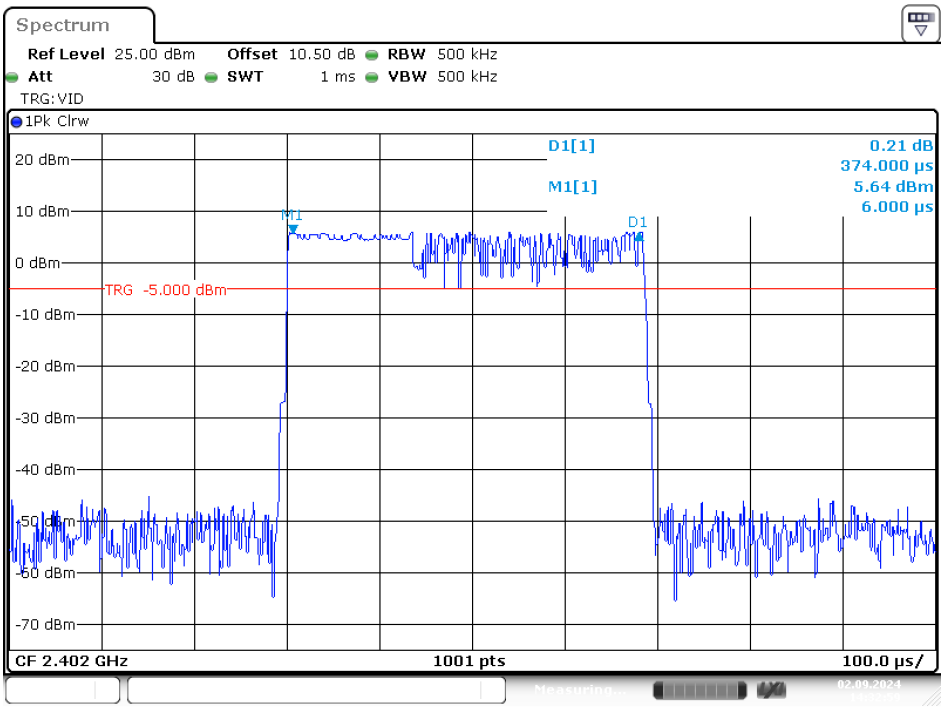
(Hopping Number = 9 in 1/10 period of highest signals, Second High signals were other channel)



Date: 2.SEP.2024 14:02:13

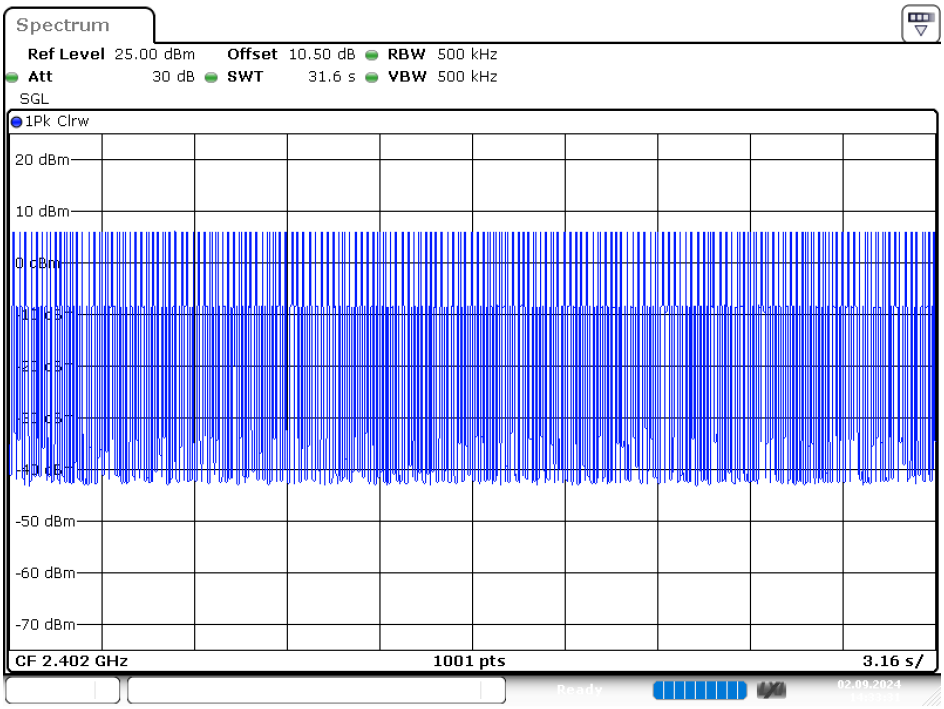
EDR Mode (8DPSK)

3DH1: Pulse Width



Date: 2.SEP.2024 14:32:59

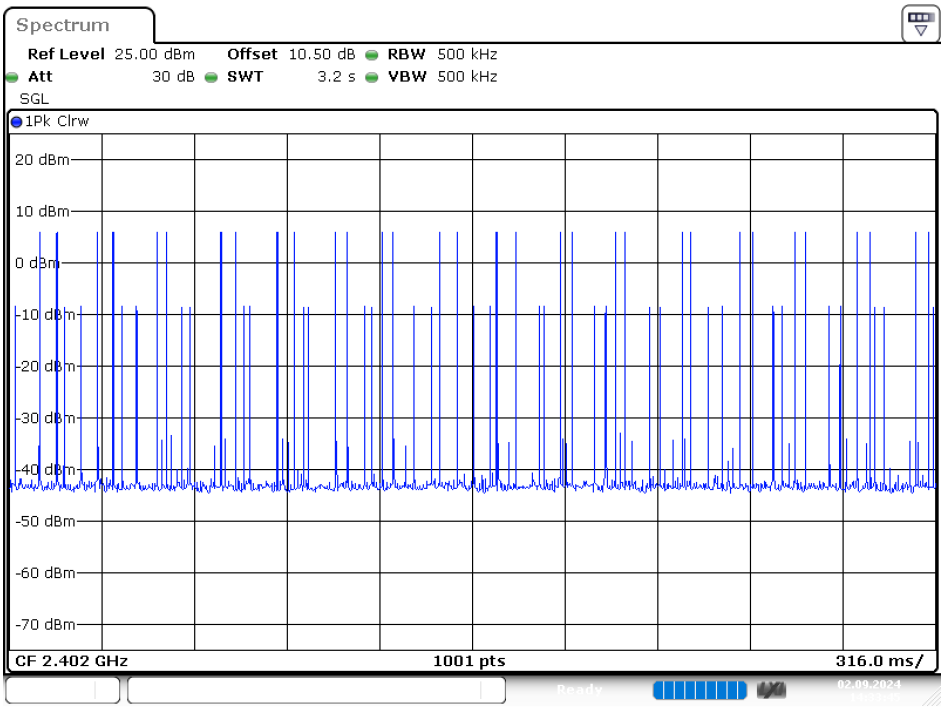
3DH1: Hopping Number



Date: 2.SEP.2024 14:33:31

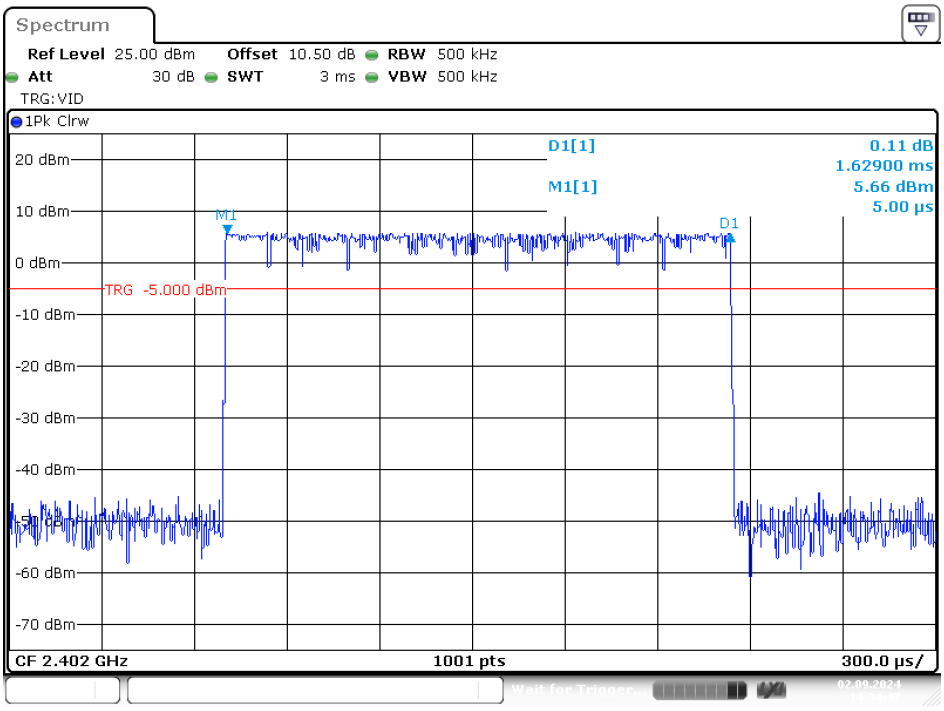
3DH1: Hopping Number /10

(Hopping Number = 32 in 1/10 period of highest signals, Second High signals were other channel)



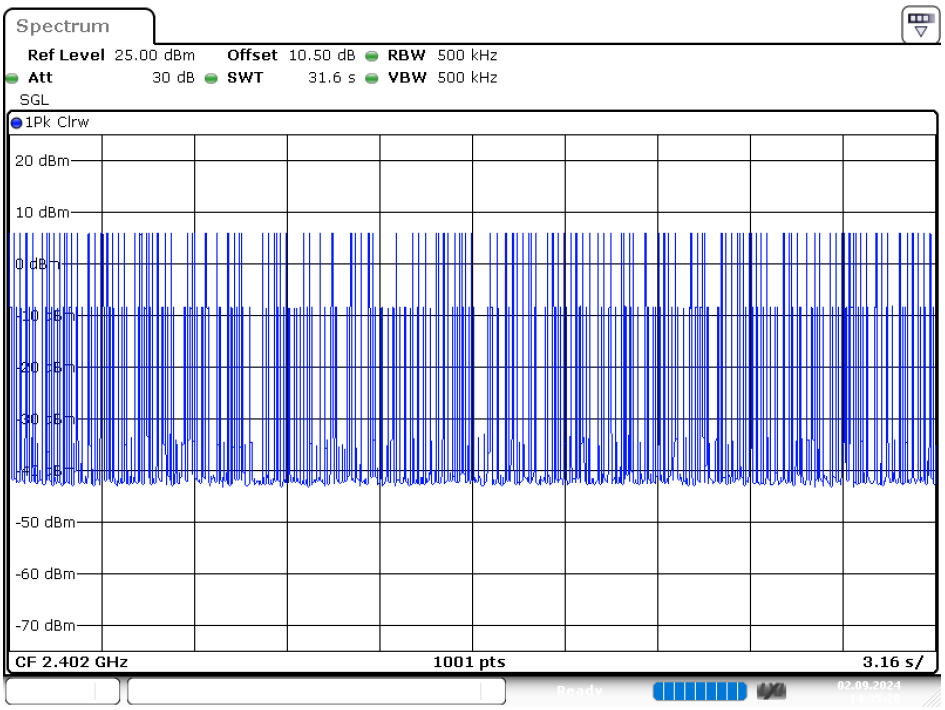
Date: 2.SEP.2024 14:33:45

3DH3: Pulse Width



Date: 2.SEP.2024 14:34:47

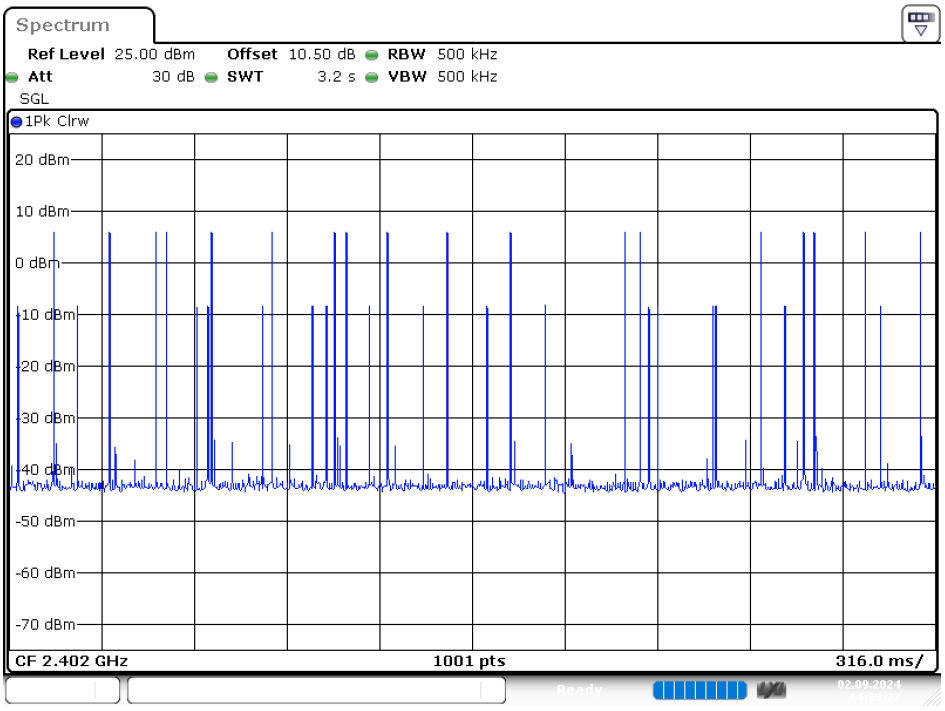
3DH3: Hopping Number



Date: 2.SEP.2024 14:35:20

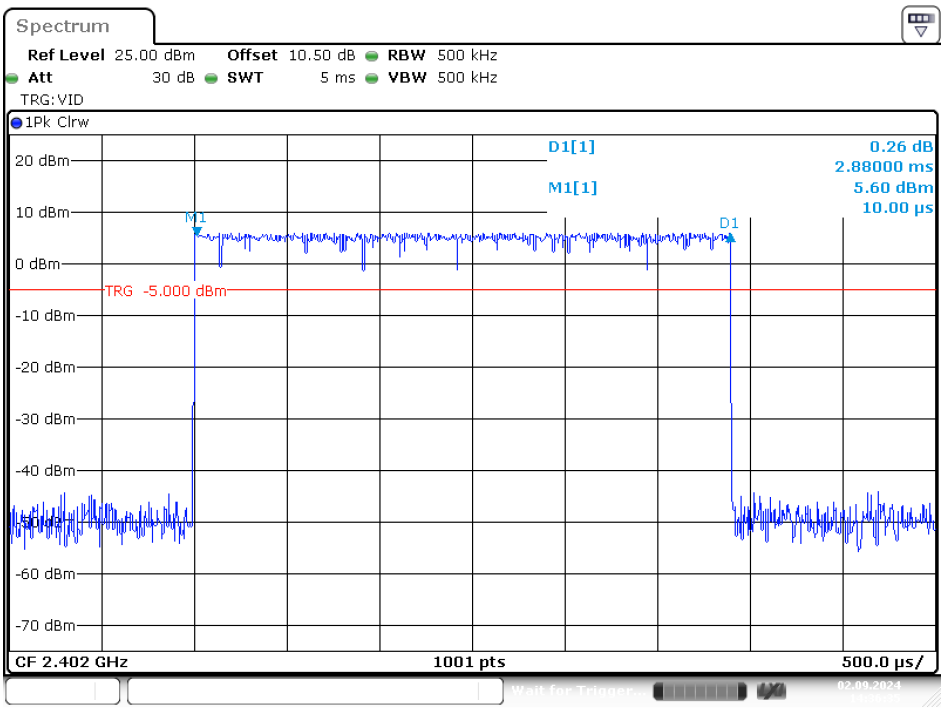
3DH3: Hopping Number /10

(Hopping Number = 18 in 1/10 period of highest signals, Second High signals were other channel)



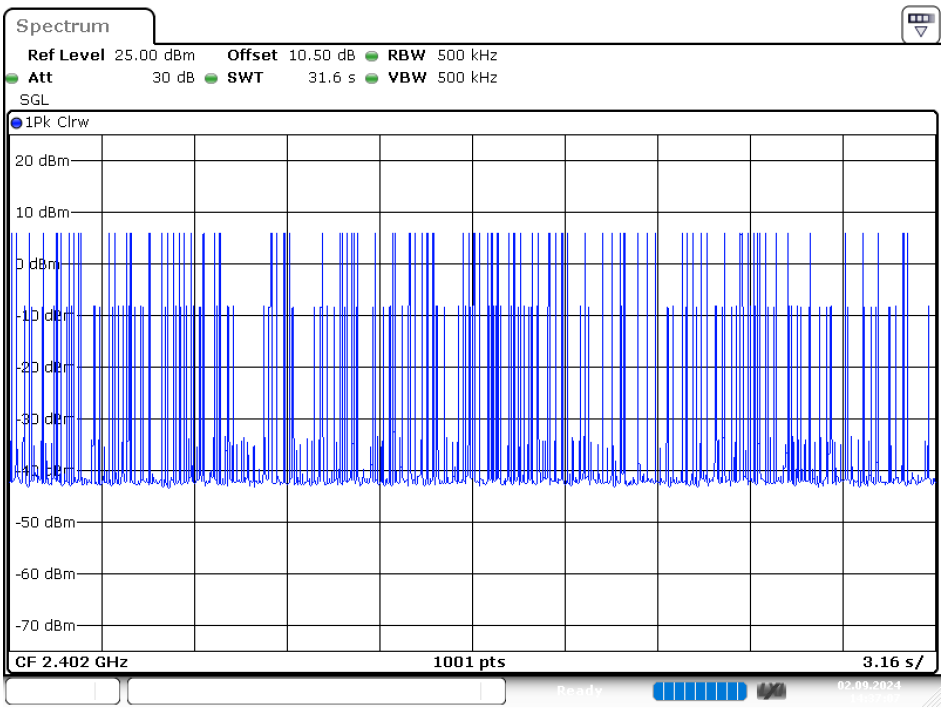
Date: 2.SEP.2024 14:35:27

3DH5: Pulse Width



Date: 2.SEP.2024 14:36:35

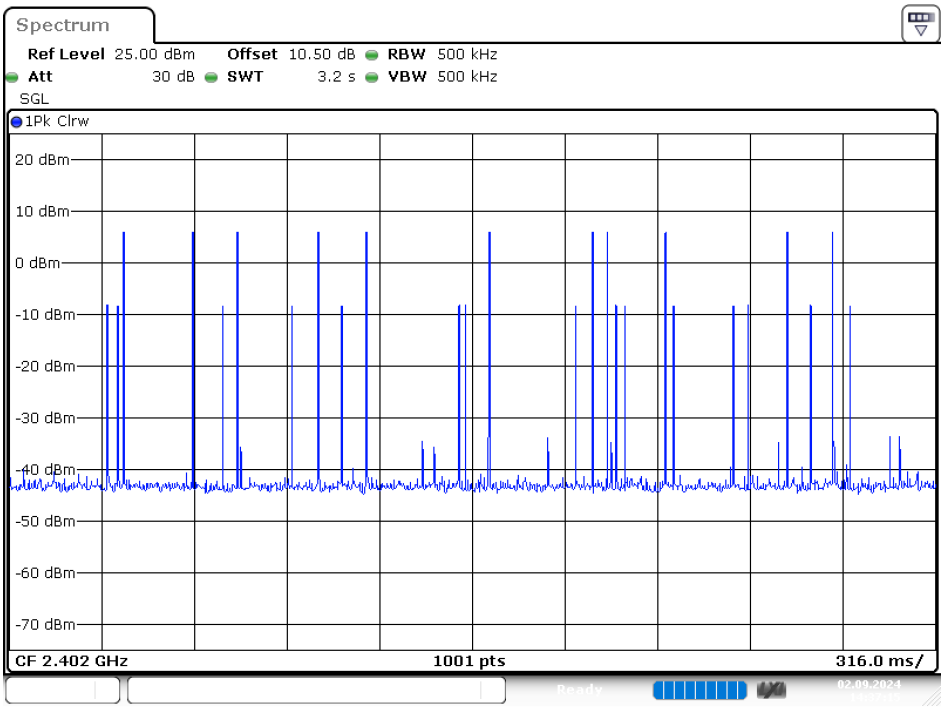
3DH5: Hopping Number



Date: 2.SEP.2024 14:37:07

3DH5: Hopping Number /10

(Hopping Number = 11 in 1/10 period of highest signals, Second High signals were other channel)



Date: 2.SEP.2024 14:37:15

12. FCC §15.247(a)(1)(iii) –Quantity of hopping channel Test

12.1. Applicable Standard

According to FCC §15.247(a) (1) (iii).

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

12.2. Test Procedure

According to ANSI C63.10-2013, section 7.8.3

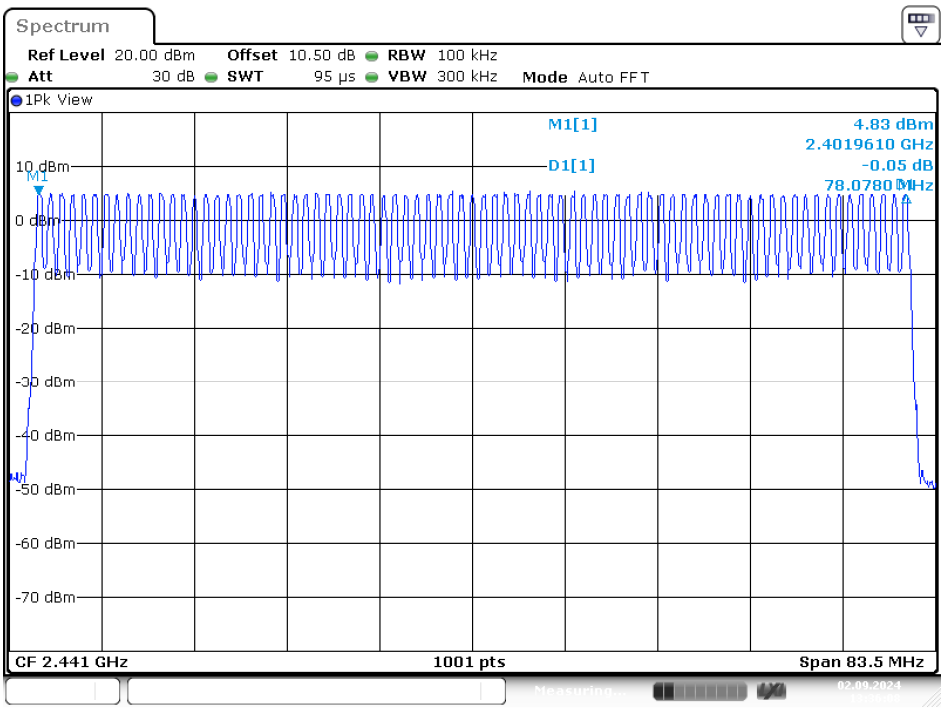
1. The EUT shall have its hopping function enabled.
2. Set the EUT in hopping mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

12.3. Test Results

Mode	Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)	Result
GFSK	2402-2480	79	>15	Compliance
π/4-DQPSK	2402-2480	79	>15	Compliance
8DPSK	2402-2480	79	>15	Compliance

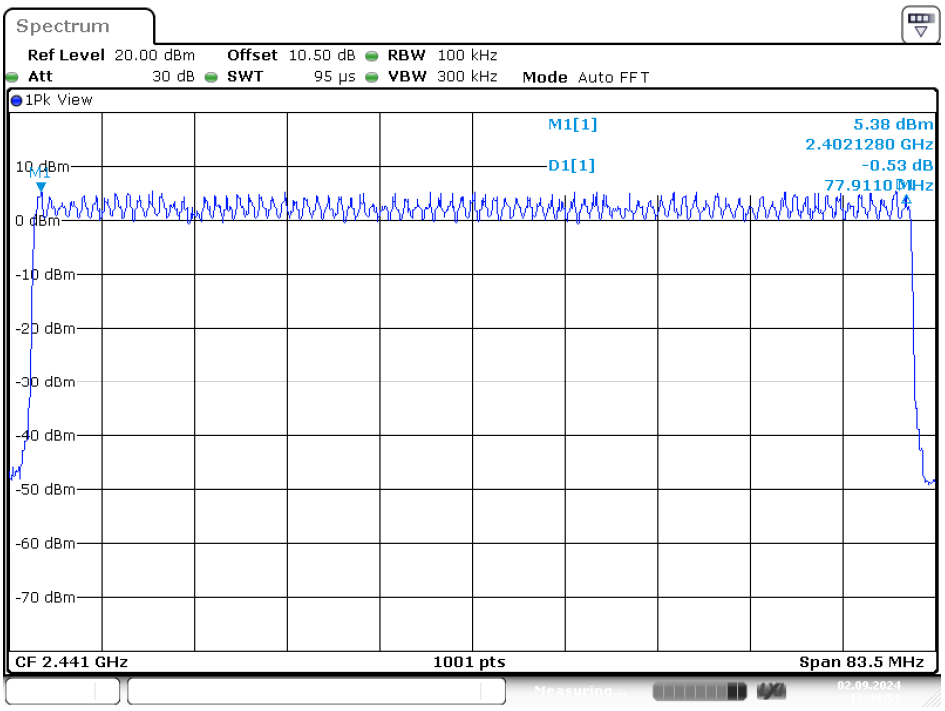
Please refer to the following plots

BR Mode (GFSK)



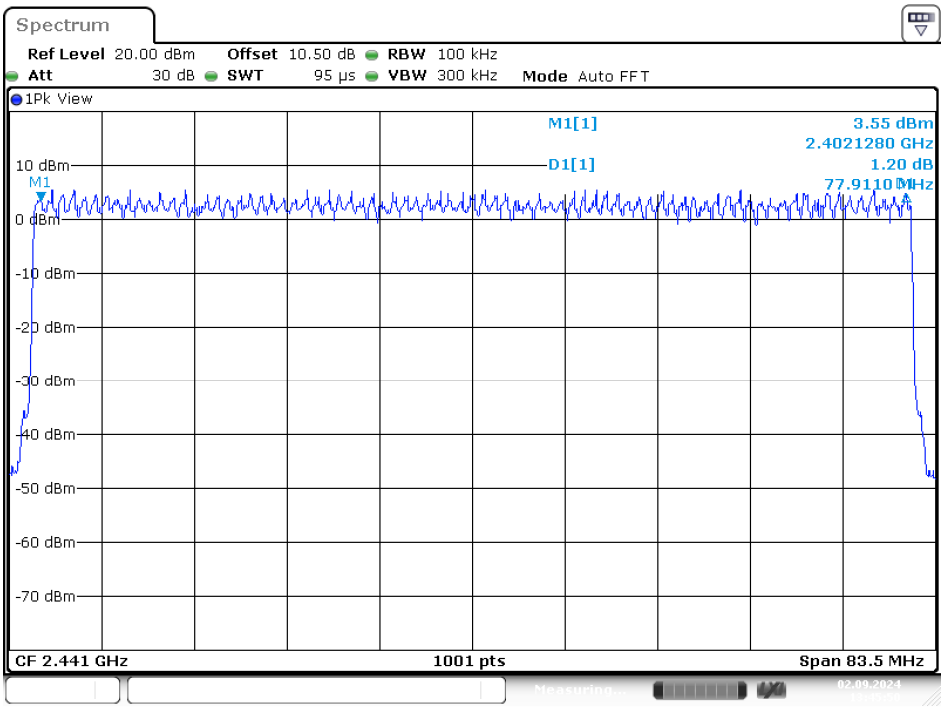
Date: 2.SEP.2024 13:36:09

EDR Mode (π/4-DQPSK)



Date: 2.SEP.2024 13:40:51

EDR Mode (8DPSK)



Date: 2.SEP.2024 13:45:50

13. FCC §15.247(b)(1) – Maximum Output Power

13.1. Applicable Standard

According to FCC §15.247(b) (1).

Frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725- 5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

13.2. Test Procedure

According to ANSI C63.10-2013, section 7.8.5

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to measuring equipment.

13.3. Test Results

Conducted Peak Output Power

Channel	Frequency (MHz)	Conducted Peak Output Power		Limit (W)	Result
		(dBm)	(W)		
BR Mode (GFSK)					
Low	2402	4.81	0.003	0.125	Compliance
Middle	2441	4.62	0.003	0.125	Compliance
High	2480	4.60	0.003	0.125	Compliance
EDR Mode (π/4-DQPSK)					
Low	2402	5.89	0.004	0.125	Compliance
Middle	2441	5.59	0.004	0.125	Compliance
High	2480	5.37	0.003	0.125	Compliance
EDR Mode (8DPSK)					
Low	2402	5.80	0.004	0.125	Compliance
Middle	2441	5.58	0.004	0.125	Compliance
High	2480	5.47	0.004	0.125	Compliance

Conducted Average Output Power

Channel	Frequency (MHz)	Conducted Average Output Power (dBm)	Duty Factor (dB)	Conducted Average Output Power With Duty Factor (dBm)		Limit (W)	Result
				(dBm)	(W)		
BR Mode (GFSK)							
Low	2402	2.92	1.15	4.07	0.003	0.125	Compliance
Middle	2440	2.79	1.15	3.94	0.002	0.125	Compliance
High	2480	2.75	1.15	3.90	0.002	0.125	Compliance
EDR Mode (π/4-DQPSK)							
Low	2402	2.80	1.20	4.00	0.003	0.125	Compliance
Middle	2440	2.64	1.20	3.84	0.002	0.125	Compliance
High	2480	2.59	1.20	3.79	0.002	0.125	Compliance
EDR Mode (8DPSK)							
Low	2402	2.73	1.22	3.95	0.002	0.125	Compliance
Middle	2440	2.68	1.22	3.90	0.002	0.125	Compliance
High	2480	2.67	1.22	3.89	0.002	0.125	Compliance

14. FCC §15.247(d) – 100 kHz Bandwidth of Frequency Band Edge

14.1. Applicable Standard

According to FCC §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emissions limits specified in §15.209(a) see §15.205(c).

14.2. Test Procedure

According to ANSI C63.10-2013, section 7.8.6

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation.

RBW = 100 kHz, VBW = 300 kHz

Sweep time = auto couple

Detector function = peak

Trace = max hold

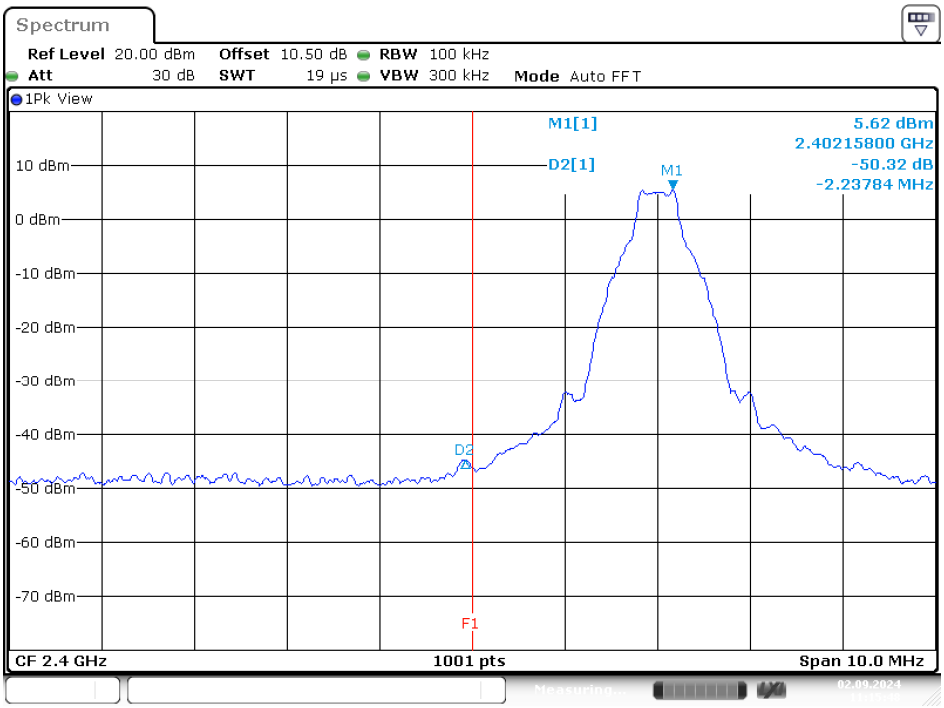
14.3. Test Results

Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result
BR Mode (GFSK)				
Low	2402	50.32	≥ 20	PASS
High	2480	53.08	≥ 20	PASS
BR Hopping Mode (GFSK)				
Low	2402-2480	52.80	≥ 20	PASS
High	2402-2480	52.92	≥ 20	PASS
EDR Mode (π/4-DQPSK)				
Low	2402	51.11	≥ 20	PASS
High	2480	51.82	≥ 20	PASS
EDR Hopping Mode (π/4-DQPSK)				
Low	2402-2480	51.92	≥ 20	PASS
High	2402-2480	52.35	≥ 20	PASS
EDR Mode (8DPSK)				
Low	2402	51.00	≥ 20	PASS
High	2480	52.00	≥ 20	PASS
EDR Hopping Mode (8DPSK)				
Low	2402-2480	51.57	≥ 20	PASS
High	2402-2480	52.16	≥ 20	PASS

Please refer to the following plots.

BR Mode (GFSK)

Band Edge, CH Low



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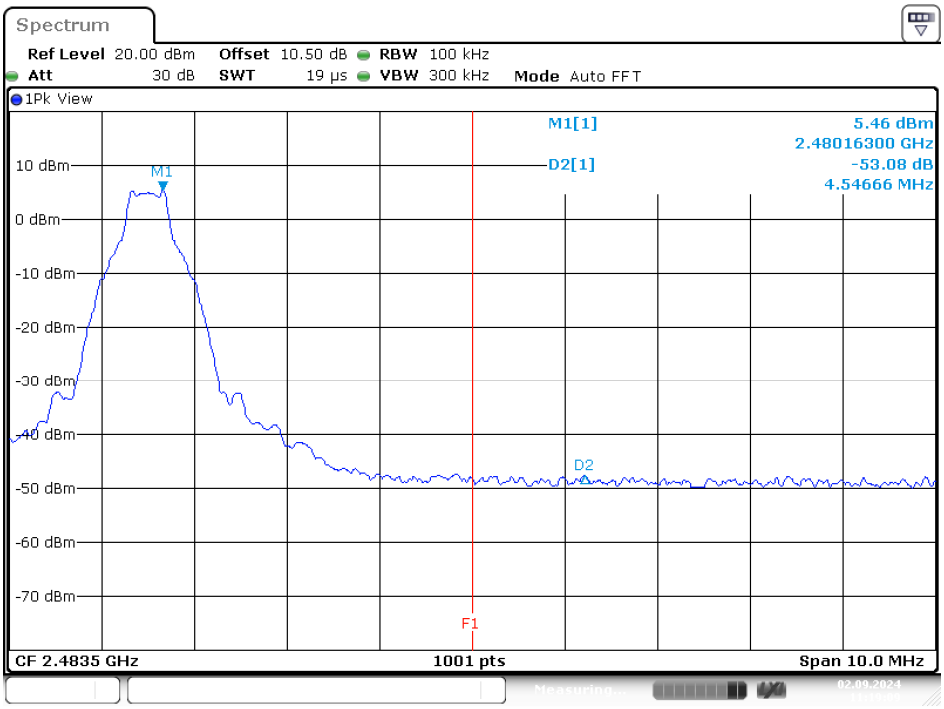
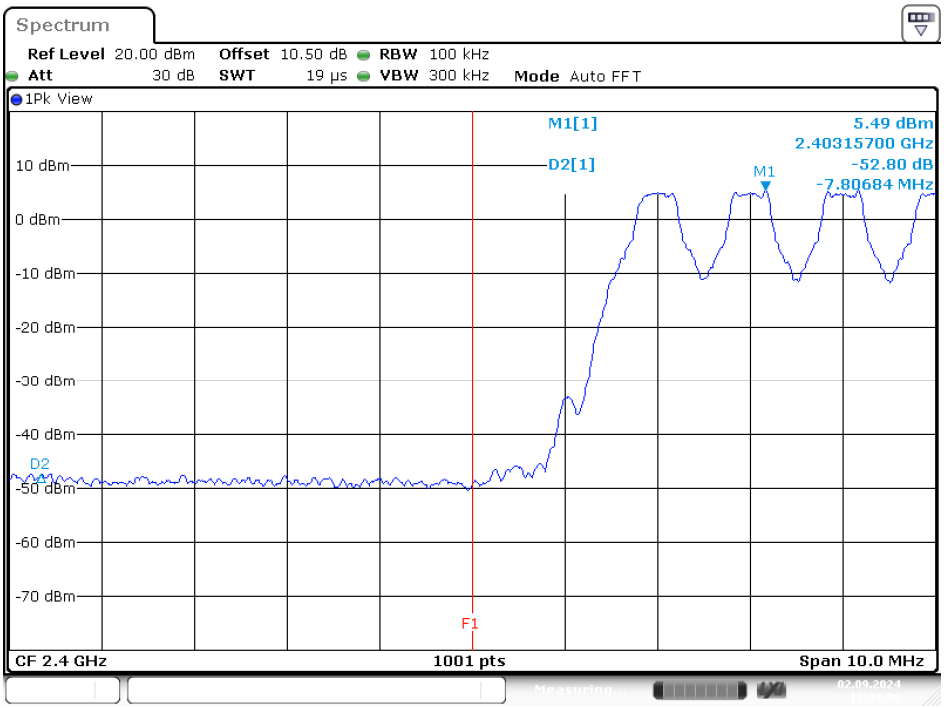
Band Edge, CH High



Date: 2.SEP.2024 11:19:10

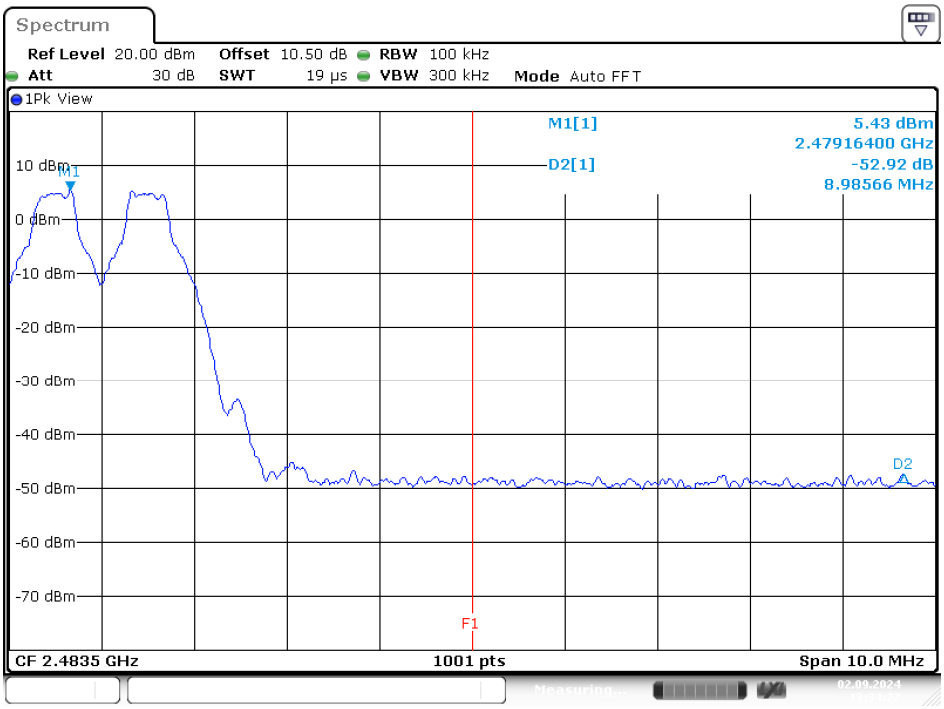
BR Hopping Mode (GFSK)

Band Edge, CH Low



Date: 2.SEP.2024 13:34:09

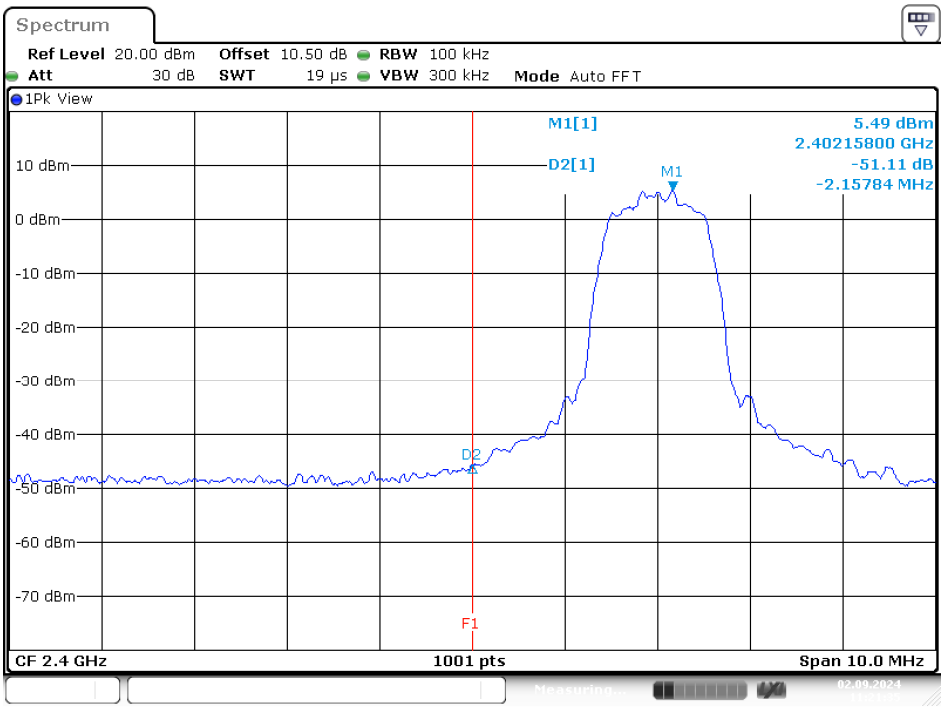
Band Edge, CH High



Date: 2.SEP.2024 13:34:28

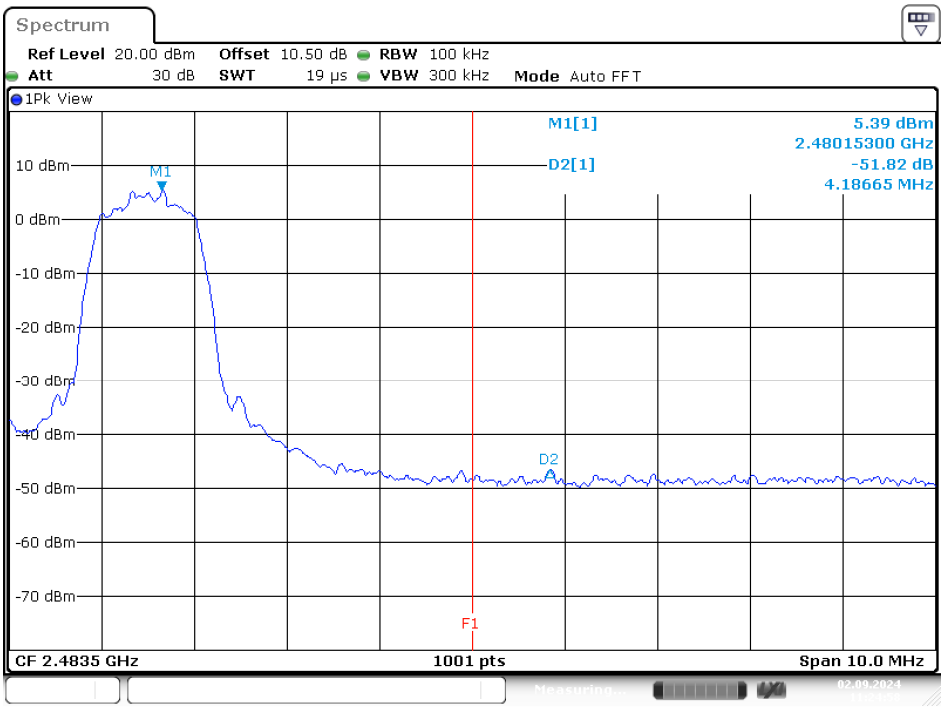
EDR Mode (π/4-DQPSK)

Band Edge, CH Low



Date: 2.SEP.2024 11:21:36

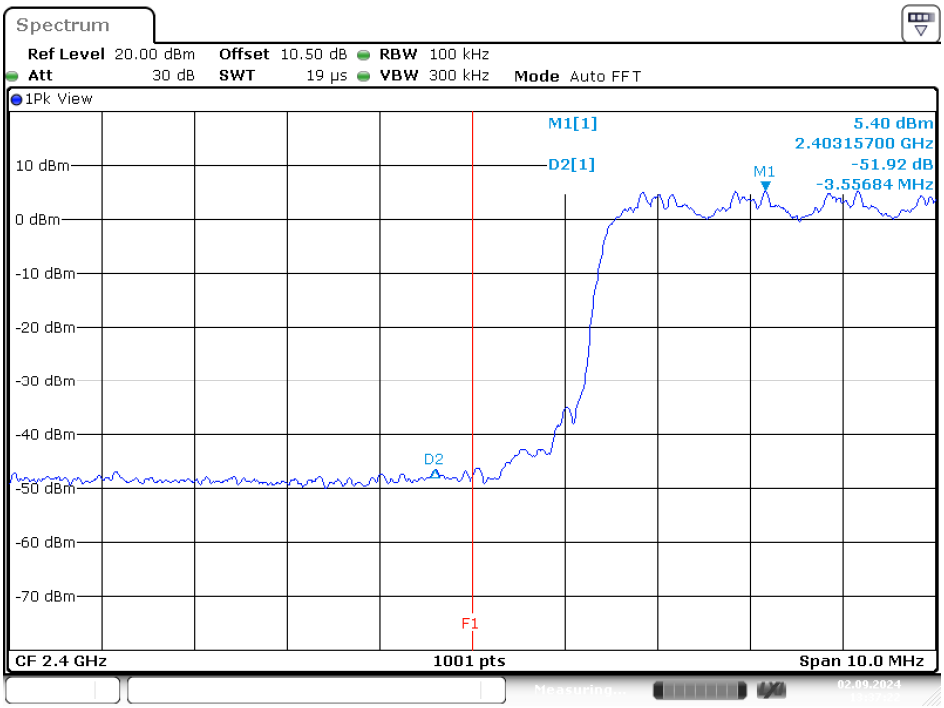
Band Edge, CH High



Date: 2.SEP.2024 11:24:59

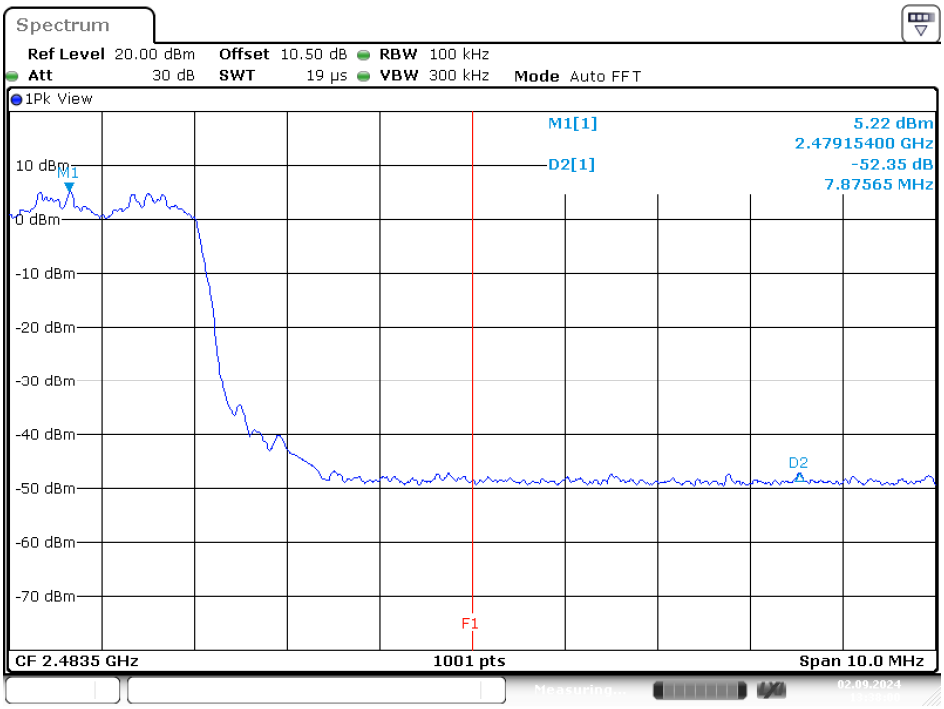
EDR Hopping Mode (π/4-DQPSK)

Band Edge, CH Low



Date: 2.SEP.2024 13:37:22

Band Edge, CH High



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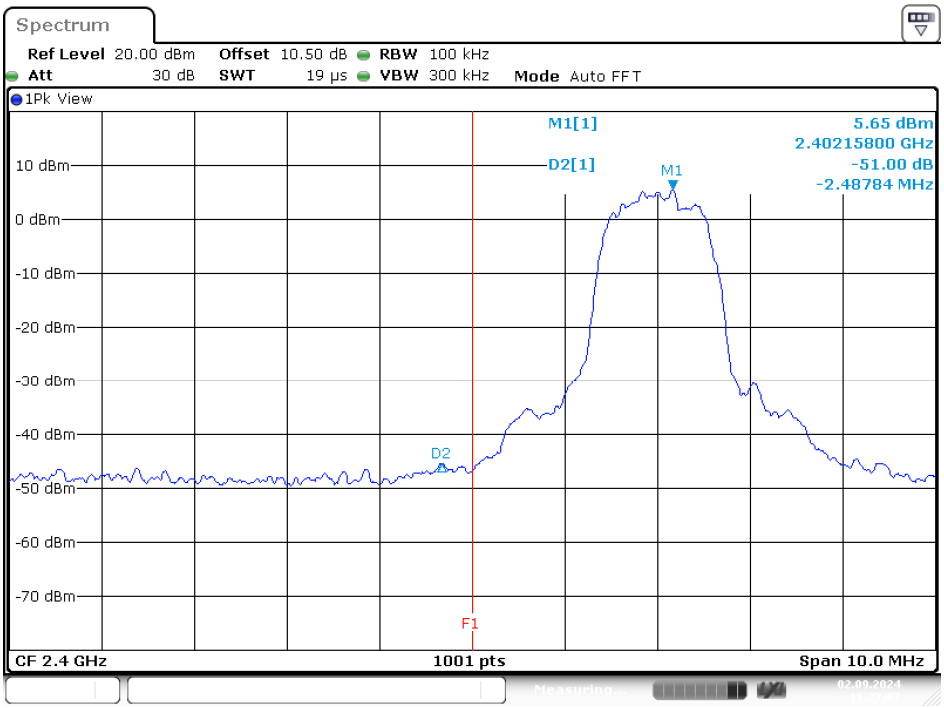
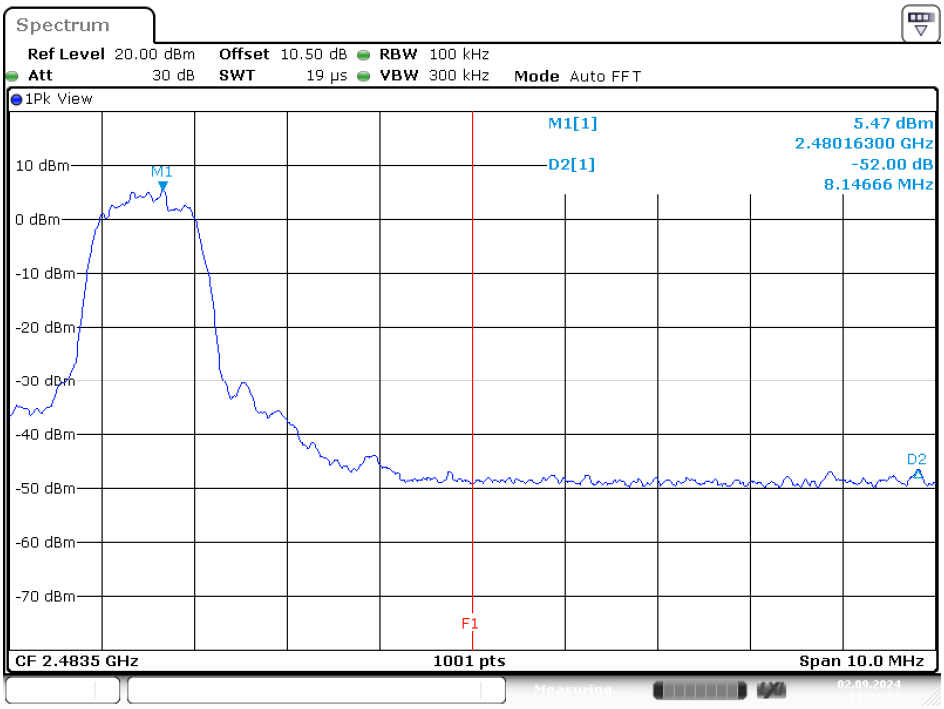
EDR Mode (8DPSK)

Band Edge, CH Low



Date: 2.SEP.2024 11:27:07

Band Edge, CH High



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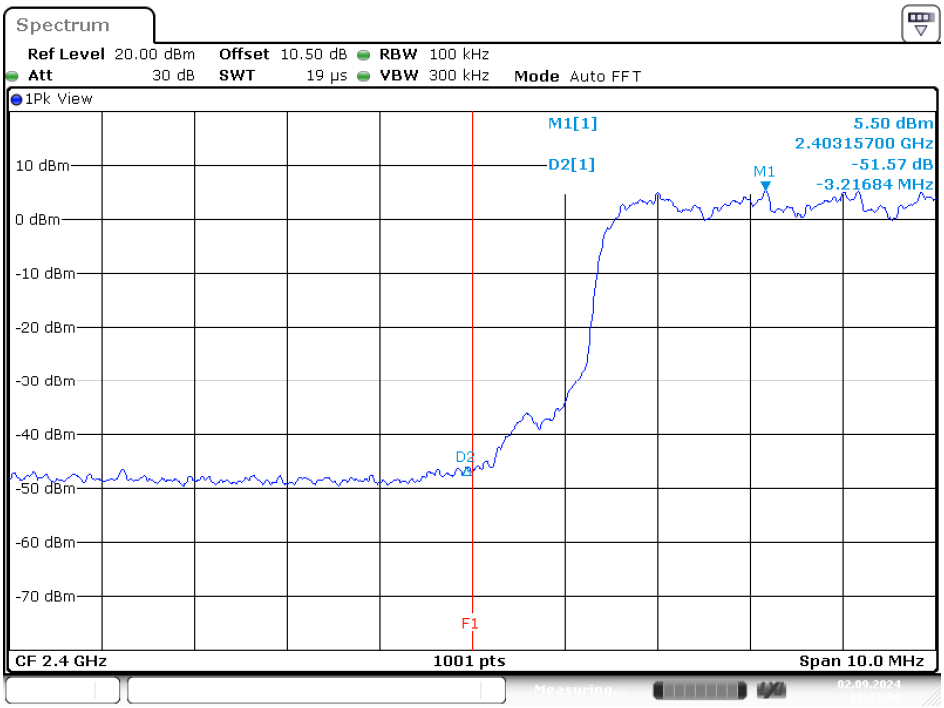
EDR Hopping Mode (8DPSK)

Band Edge, CH Low



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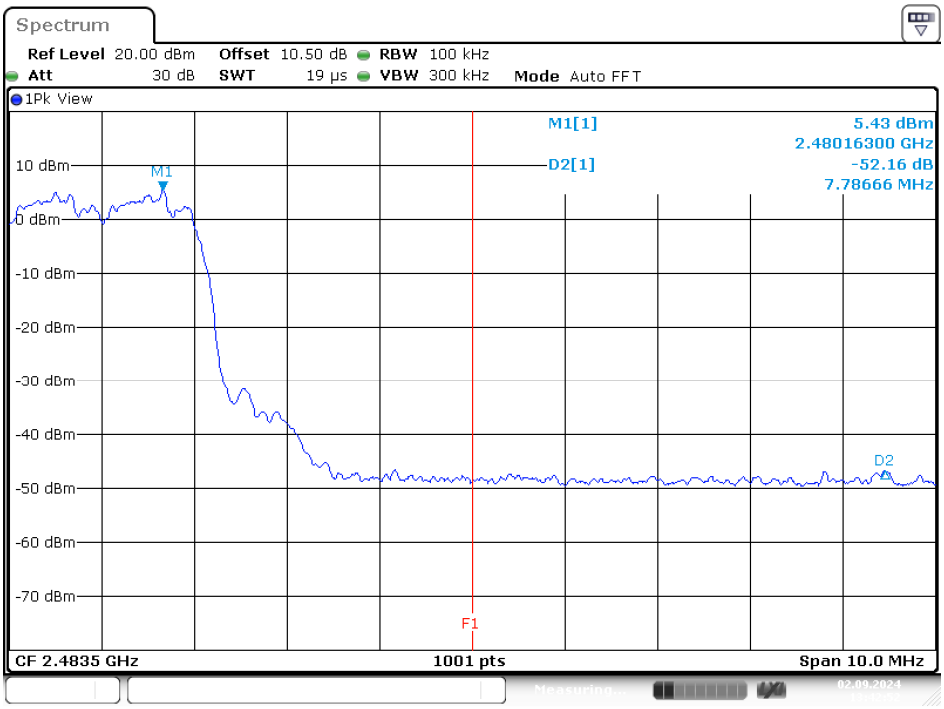
Band Edge, CH High



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